
INDIANA'S SCHOOLING DESERTS

Identifying Hoosier Communities Lacking
Highly Rated Schools, Multi-Sector Options

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Michael Shaw



ABOUT EDCHOICE

EdChoice is a nonprofit, nonpartisan organization dedicated to advancing full and unencumbered educational choice as the best pathway to successful lives and a stronger society. EdChoice believes that families, not bureaucrats, are best equipped to make K-12 schooling decisions for their children. The organization works at the state level to educate diverse audiences, train advocates and engage policymakers on the benefits of high-quality school choice programs. EdChoice is the intellectual legacy of Milton and Rose D. Friedman, who founded the organization in 1996 as the Friedman Foundation for Educational Choice.

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EXECUTIVE SUMMARY

Indiana has been nationally heralded as a land of educational opportunity, boasting a robust voucher program, tax-credit scholarships, an expansive charter sector, and public school enrollment policies that include magnet schools as well as inter- and intra-district transfers. In theory, that array of options is intended to be available to every Hoosier student, and our research found that most students live within 30 minutes of a charter, magnet, or voucher-participating private school.

But that does not mean that all parts of the state have *equitable* access to K–8 or high school options, creating so-called “schooling deserts” where families either lack access to highly rated schools or to options beyond one schooling type—or, in some cases, both. There also exist parts of the state where students only have access to a poorly rated school of any type.

Using geospatial analyses, we calculated drive times from highly rated schools and charter, magnet, and voucher-participating schools to determine the location of schooling deserts across the state. For the most part, these deserts exist in rural areas of the state, and they reflect one or more of these characteristics:

- (1) A highly rated schooling desert, where families lack access to A-rated schools of any kind;
- (2) A choice desert, where families lack access to charter, magnet, or voucher-participating private schools;
- (3) An educational opportunity zone, where students seem to have reasonable access only to a poorly rated school of any type (a school that would fail to meet something similar to the state’s voucher accountability criteria).

We specifically introduced the term “educational opportunity zone” to describe the parts of the state that desperately need to improve existing options and/or invest in new, highly rated schooling options.

In addition to these broad schooling desert categories, we found differences in access related to schooling sector, grade level, and income eligibility status related to the state’s voucher program, both within those communities and throughout the state. Furthermore, we observed sector differences when it comes to which type of highly rated schools are close to the families that need them.

We focused our research on Indiana’s schooling desert landscape to benefit these key audiences: policymakers, educators, educational entrepreneurs, and parents. Policymakers, both within Indiana’s legislature and its Department of Education, can use this information to learn more about areas with the most need for educational options and, by their own measures, quality. In addition, they can craft or adjust policies and regulations that might make it easier to improve schools in these areas, paving the way for educators and educational entrepreneurs to nurture new options, potentially by replicating ones that exist elsewhere in the state. Finally, parents in these communities and throughout Indiana can take stock of their K–12 environments and determine whether they truly have options where they live.

Indiana’s Choice Landscape and Accountability Standards

Indiana launched its Choice Scholarship Program seven years ago; the program provides tuition vouchers to families for use at private schools. Vouchers are worth 90 percent of the state’s per-student spending for families eligible for the federal free and reduced-price lunch (FRL) program and 50 percent of per-student spending to families who earn one-and-a-half times the FRL guidelines, among other eligibility criteria. More than 35,000 students used the Choice Scholarship Program in the 2017–18 school year. Indiana also operates a tax-credit scholarship program that allows families to obtain scholarships to attend private schools from non-profit organizations that accept charitable donations in exchange for state tax credits.

Charter schools, which are independently run public schools that typically have more operational flexibility than district schools, have operated in Indiana since 2002. Students may attend charter schools if they meet school-based eligibility criteria or win an admissions lottery. Students can enroll in charter schools across district lines; 4.3 percent of Indiana students attended charter schools last year.

As in most states, the majority of Indiana K–12 students attend residentially assigned public schools. That said, public school choice also exists in the state, with 4.9 percent of Indiana students choosing to use their public funds to transfer to a public school outside of their district. Some districts also allow for the transfer of students between schools located within the district, and some districts operate public magnet schools that attract students interested in themed-based curricula such as STEM, International Baccalaureate, and World Languages.

Each year, the Indiana State Board of Education gives all of these types of schools A–F accountability grades, which are determined largely based on students’ scores on the state’s standardized assessment. Indiana provides a fairly uniform way to compare schools’ accountability grades because most private schools had been administering the state assessment prior to the implementation of the voucher program. These grades have various consequences in the context of accountability, with private schools unable to accept new voucher students when rated “D” or “F” for two or more consecutive years and public schools risking closure or state takeover for persistently low grades.

Education stakeholders often view these grades as a proxy for quality. School leaders proudly display “A” ratings in recruitment materials and can use lower grades as a diagnostic for improvement. Parents can use these grades when assessing their

child’s school or when researching a potential new school. As previously mentioned, policymakers and regulators use the grading system to hold schools accountable to various degrees depending on sector, as well as to assess the state’s education landscape.

For this report, we used these accountability grades to determine whether a school is “highly rated” or not, but it is important to understand that their reliance on test scores, subjective weighting, and lack of qualitative measures may not accurately reflect the range of educational outcomes a school provides its students.

We know from research on public and private school parents in Indiana that families have different preferences when it comes to choosing and assessing their child’s school.ⁱ That is why this report identifies not just communities that lack access to highly rated schools, but also parts of the state that are devoid of educational options. That way, we can paint a more vibrant, reliable picture of Indiana’s educational landscape—and the places where opportunities for growth exist.

Research Questions and Mapping Methodology

Despite Indiana’s robust school choice environment, not all Hoosiers have reasonable access to options outside of their public school. We sought to pinpoint where this phenomenon is most pronounced and to understand those areas. How does access differ between primary and secondary schools? What proportion of families in various income groups live within these areas? How does access vary by school sector? Where do students and families have access *only* to low-rated schools regardless of sector?

ⁱ Andrew D. Catt and Evan Rhinesmith (2017), *Why Indiana Parents Choose: A Cross-Sector Survey of Parents’ Views in a Robust School Choice Environment*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-2.pdf>

Our research examined the premise that where overall access may exist, access for sub-groups may not necessarily follow. To that end, we explored comparisons between the K–8 and high school grade ranges to account for the full K–12 educational journey, as opposed to exploring overall K–12 schooling deserts.

We identified these schooling deserts using geospatial mapping and drive-time measurements assuming a maximum 30-minute drive-time—the distance parents in a prior statewide survey said they’d be willing to drive—to denote the boundaries of the deserts. We used the most recent five-year estimates from the American Community Survey (ACS) to estimate the populations that live within the deserts. For the final analysis of the report, we incorporated school attendance boundaries from a federal dataset to determine where students seem to only have a reasonable access to poorly rated schools.

Key Findings

Looking at the big picture, nine out of 10 Hoosier families are a 15-minute drive or less from an A-rated K–8 school of any type (public, private, or charter) and a 21-minute drive from an A-rated high school of any type. All Indiana students are within 45 minutes of an A-rated school of any type.

That’s the good news.

The 30,000-foot view of Indiana’s educational landscape is a positive one, but thousands of Hoosier students fall into schooling deserts where their drive time is more than 30 minutes to a highly rated school or to a school of choice, or where their options are limited to poorly rated schools within that distance. Students in elementary and middle school have more options than those in high school.

When we looked at the data by schooling sector, we found that outside of urban areas, traditional public schools and non-public schools are providing more highly rated options within a shorter distance than charter schools.

It’s important to assess schooling and choice deserts in Indiana because these deserts provide opportunities for policymakers, educators, and entrepreneurs to invest in high-quality educational options. The improvement of educational options and performance in these communities represent a straightforward way to come closer to equitable educational opportunities across Indiana.

Please note that for the purposes of this section “K–8 school” means any school that serves at least one K–8 grade level. “High school” means any school that serves at least one 9–12 grade level.

K–8 Deserts

- All Indiana K–8 students are within 45 minutes of any A-rated K–8 school, but 3,699 K–8 students are 30 minutes or more from any A-rated K–8 school regardless of sector.
- Nine out of 10 Indiana K–8 students live within a 15-minute drive from any A-rated K–8 school, but distances vary by sector: 18 minutes from an A-rated traditional public school, 31 minutes from an A-rated voucher-participating school, 92 minutes from an A-rated public charter school, and 147 minutes from an A-rated magnet school.
- 24,810 K–8 students (2.8%) live in a K–8 choice desert, meaning they are 30 minutes or more away from any K–8 charter, magnet, or voucher-participating school. All Indiana K–8 students live within 56 minutes of a choice school.
- 24,860 K–8 students (2.8%) have reasonable access—30 minutes or less—only to their public school or a poorly rated school of choice.

- o Eighteen “D” and “F” public K–8 schools are within what we refer to as educational opportunity zones, meaning students assigned to these schools do not have reasonable access to a highly rated school of any type.

High School Deserts

- All Indiana high school students live within a 45-minute drive from any A-rated high school, but 6,668 high school students are 30 minutes or more from any A-rated high school regardless of sector.ⁱⁱ
- Nine out of 10 Indiana high school students live within 21 minutes of any A-rated high school, but distances vary by sector: 22 minutes from an A-rated traditional public school, 60 minutes from an A-rated voucher-participating school, and 88 minutes from an A-rated charter school.
- 45,072 high school students (9.8%) live in a high school choice desert, meaning they are 30 minutes or more away from any charter, magnet, or voucher-participating high school. All Indiana high school students live within 80 minutes of any charter, magnet, or voucher-participating high school.
- 52,661 high school students (11.5%) have reasonable access—30 minutes or less—only to their public school or a poorly rated school of choice. That is 7,589 more students than live in the high school choice deserts.
- o Three “D” and “F” public high schools are within what we refer to as educational opportunity zones, meaning students assigned to these schools do not have reasonable access to a highly rated school of any type.

ⁱⁱ No magnet schools that served at least one high school grade were “A” rated in 2016–17.

INTRODUCTION

On paper, Indiana is rich with educational options. Thousands of parents in Indiana are choosing a school for their children other than their residentially assigned school. This includes private schools, public charter schools, and district schools outside of the district in which they reside.¹ Yet despite Indiana's robust school choice environment—which includes private school vouchers, tax-credit scholarships, inter-district and intra-district enrollment programs, and charter schools—families in certain Hoosier communities do not have options when it comes to highly rated or non-traditional schooling options.

Seventeen years after passing its charter law, 10 years after codifying voluntary district open enrollment, and seven years after the implementation of its voucher program, Indiana is being touted on the national stage as a model state for educational options and improvement.² Questions of quality and how to measure it, as well as access to quality educational options, persist in the state. From an overhaul of the state's high school graduation requirements, passage of school safety legislation, and exploration of new choice funding mechanisms, Indiana's legislature has recently prioritized a more wholistic analysis of the state's educational landscape.³ But the state's highly rated and diverse educational options are not distributed equitably. Education stakeholders in Indiana, including parents, policymakers, and educators, are likely curious which geographic areas lack highly rated and/or multi-sector schooling options.

This report should help us all understand the geography of choice across the state.

BACKGROUND

For many Hoosier families, policymakers, and educators, comparing Indiana schools often boils down to knowing a fifth of the alphabet: The Indiana State Board of Education (SBOE) assigns A–F school grades through the Indiana Department of Education's (IDOE) Office of Accountability. Broadly speaking, the board's grade calculation uses state assessment scores in mathematics and English/Language Arts to determine overall performance and growth.⁴ These measures are weighted along with cohort graduation rates, as well as college and career readiness scores, depending on school characteristics to determine a school's grade.⁵ The SBOE issues final grades to each applicable school based on this calculation, with scores of at least 90, earning a school the highest "A" rating.

All schools that enroll publicly funded students—including public, charter, magnet, and voucher-participating private schools—must take part in the state's standardized testing and accountability system. Between physical banners hanging outside of buildings, press releases, and recruiting pamphlets, schools promote their "A" ratings like proud parents displaying a top grade on a refrigerator.

Indiana provides a unique environment for both intra-sector and cross-sector school choice analysis related to these letter grades. For decades (and, importantly, predating the state's tax-credit scholarship and voucher programs),⁶ private high schools have been required to administer the state assessments to all enrolled students as a membership accreditation criterion to participate in state-sponsored athletics.⁷ This requirement likely helped mitigate the transition for would-be voucher-accepting schools to comply with the state's accountability and reporting requirements, especially compared to other voucher states.⁸

The grades are used in different ways by different audiences. Policymakers often use them as a

streamlined and standardized manner for assessing schools. K–12 education state expenditures continue to rise nationwide, and state boards and departments of education are using performance-based pay as well as A–F grading systems as a means of measuring performance in exchange for flexible and sometimes increased funding.⁹

Educators can use accountability grades to decide whether or not to take a job at a particular school, or to judge how their current school compares to others. School leaders have used accountability grades as a diagnostic for improving schools.¹⁰ In Indiana, public schools that earn persistently low grades can see intervention by the state, including being taken over.¹¹ Entrepreneurs who start charter and private schools that target publicly funded students must consider the state’s A–F accountability system as a means of establishing successful roots and retaining eligibility for enrolling publicly funded students.

The standardization offered by these accountability grades allows parents to compare schools of different sectors. Indiana is home to the nation’s largest single voucher program and passed a charter law in 2001.¹² Vouchers give parents the freedom to choose a private school for their children using a portion of the public funding set aside for their children’s education. Those eligible for a tuition voucher for low- and middle-income families may earn up to 150 percent of the federal free and reduced-price lunch (FRL) income level.¹³ Under Indiana’s program, funds typically expended by a school district are allocated to a participating family in the form of a voucher to pay partial or full tuition for that child to attend a private school, including both religious and nonreligious options.¹⁴ Charter schools are independently run public schools exempt from many rules and regulations in exchange for increased accountability. Typically, if charters receive more applications than they have open seats, they must accept students based on a lottery. Families do not need to use vouchers or tax-credit scholarships to pay to enroll their children in charter schools as these schools are publicly funded.¹⁵

Indiana also offers more traditional forms of public school choice in the form of magnet schools and intra-district and inter-district open enrollment policies. Magnet schools are district-run, often with a focused theme such as Science, Technology, Engineering, and Mathematics (STEM); Fine and Performing Arts; International Baccalaureate, International Studies; Career and Technical Education (CTE); and World Languages (immersion and non-immersion).¹⁶ Of the 1,399,822 students enrolled in Indiana in Fall 2017, at least 12.3 percent enrolled in a non-residentially-assigned school using public funds: 4.9 percent transferred to a public district school outside their district of residence, 4.3 percent attended a charter school, and 3.1 percent attended a private school via the Indiana Choice Scholarship program.¹⁷

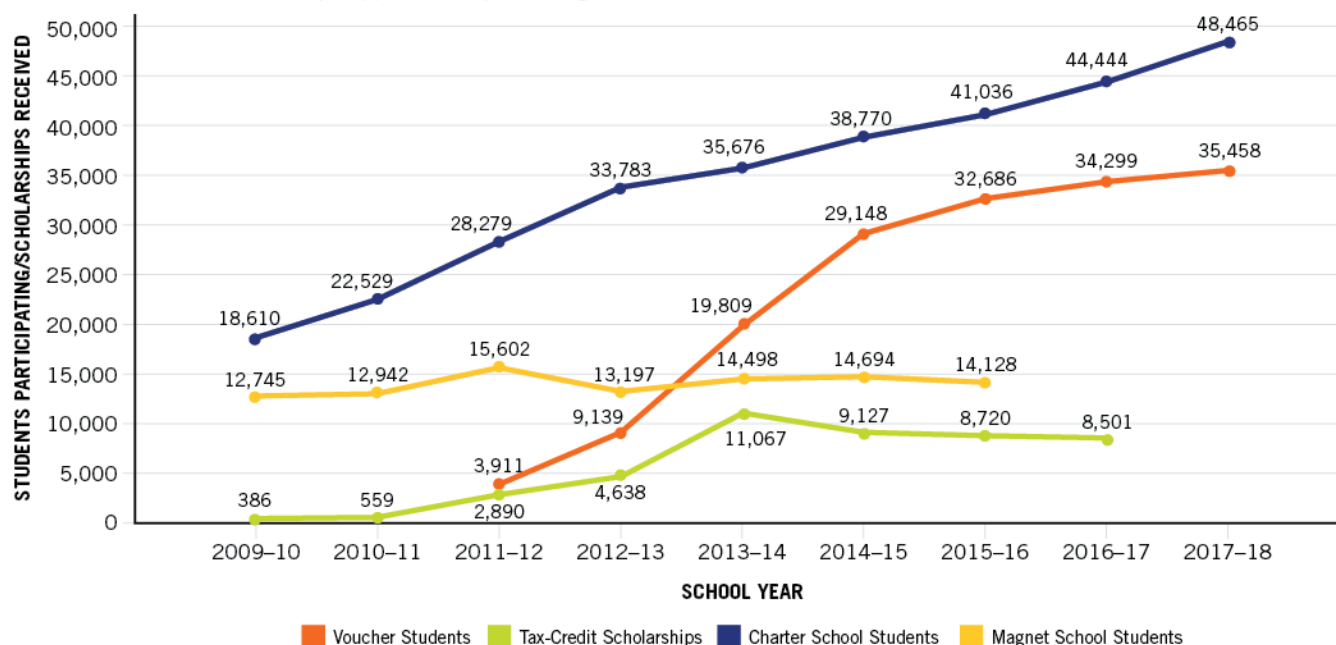
These data are encouraging to proponents of universal school choice who view all schooling sectors as part of the state’s education landscape. But data in graphs and similar figures can show only so much. Growth of various school choice programs can affect Hoosiers’ access to these schools, and enrollment data don’t take into account students’ proximity to those schools.

There are ways to rectify this disconnect. Using Geographic Information System (GIS) software to create statewide maps, we show which areas of the state lack reasonable access to highly rated schools. It’s worth noting that state letter grades assigned to schools are not considered the end-all-be-all measuring stick for education stakeholders, which include (most importantly, from our perspective) the families of children gaining important educational attributes that standardized assessments may not measure. Research on why Indiana parents choose schools shows that families want access to a diverse array of schooling options in their communities as well as schools with high state grades, which serve for some as a proxy for, but imperfect measure of, school quality.¹⁸

As this report shows, not all Indiana families have the same access to the types of educational choices for which the state has become known.

FIGURE 1**Indiana School Choice Participation Data**

Charter and voucher enrollments have grown over the past four years, while magnets and tax-credit scholarships appear to be plateauing



Sources: Authors' calculations; Andrew D. Catt and Evan Rhinesmith (2017), *Why Indiana Parents Choose: A Cross-Sector Survey of Parents' Views in a Robust School Choice Environment*, p. 8, figure 1, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-2.pdf>; National Center for Education Statistics, Search for Public Schools [web page], accessed April 26, 2018, <https://nces.ed.gov/ccd/schoolsearch/>; Indiana Department of Education (2018), *Choice Scholarship Program Annual Report: Participation and Payment Data*, retrieved from <https://www.doe.in.gov/sites/default/files/choice/2017-2018-choice-scholarship-program-report-022018-final.pdf>

Furthermore, access disparities occur in different community types, family incomes, school sectors, and grade levels. The issues and areas presented below are ones that both policymakers and education entrepreneurs could potentially use to chart the next frontier of education reform in the state.

Research Questions

The purpose of this research was to identify “schooling deserts,” areas that lack highly rated and diverse schooling options. Where overall access may exist, access for sub-groups may not necessarily follow. To that end, we explored comparisons between the K–8 and high school grade ranges to account for the full K–12 educational journey, as opposed to exploring overall schooling deserts. Please note that for the purposes of this report “K–8 school” means any school that serves at least one K–8 grade level. “High school” means any school that serves at least one 9–12 grade level.

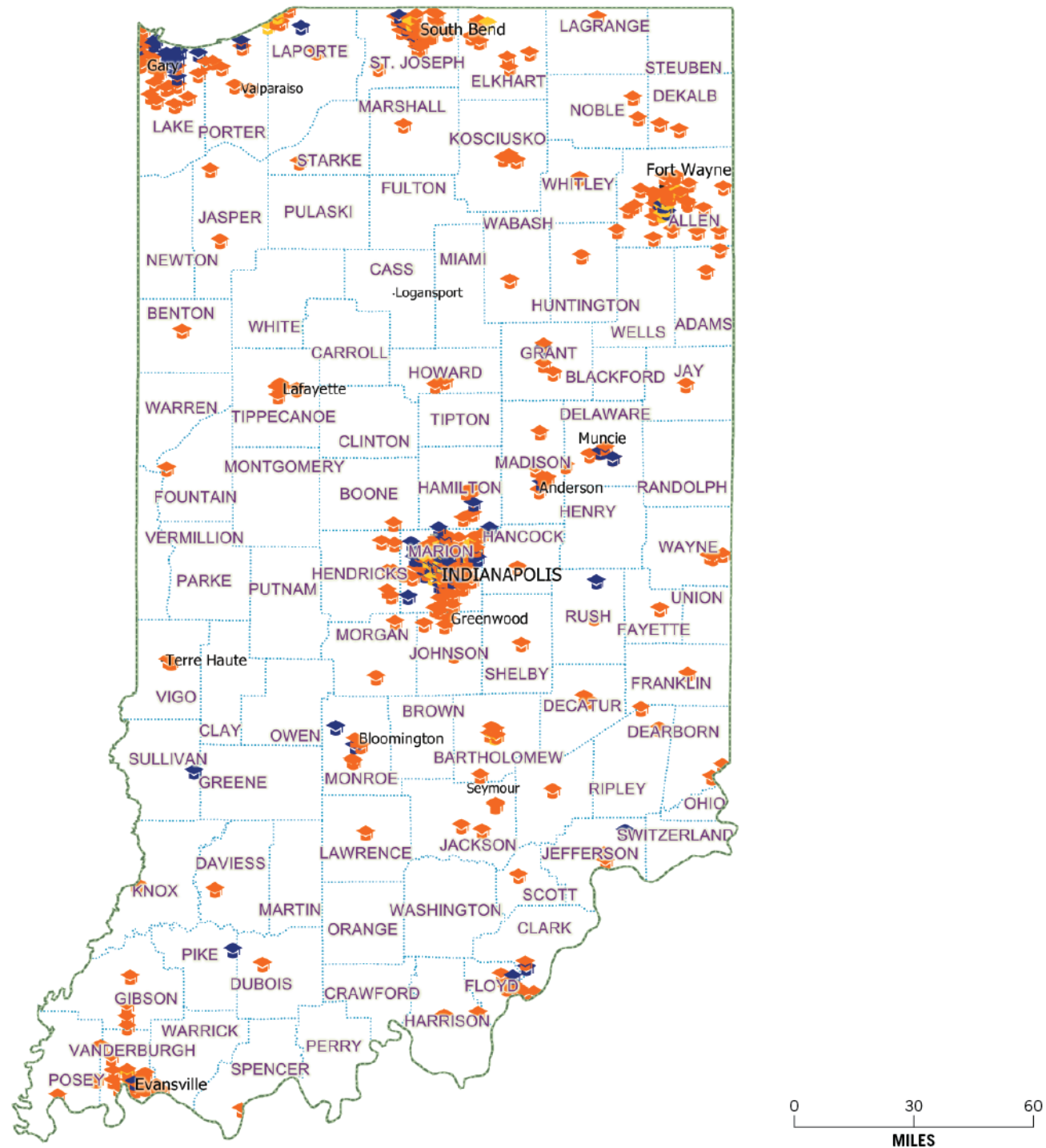
In-depth topics and questions related to schooling access in Indiana include:

- Where are Indiana’s A-rated school deserts?
- Where are Indiana’s choice deserts?
- How far are K–8 students from highly rated and non-traditional school options?
- How far are high school students from highly rated and non-traditional school options?
- What proportion of families in various income groups live in the school deserts?
- How does access to schools vary by school type?
- Where do students and families who have reasonable access only to a poorly-rated school of any kind live?

FIGURE 2

Choice Schools (K–8)

Schools of choice tend to be concentrated in urban areas, with voucher-participating private schools serving more in rural areas than charters and magnets



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SCHOOLS RATED IN 2016–17

K–8 Charter (n=75)
 K–8 Magnet (n=28)
 K–8 Voucher (n=292)

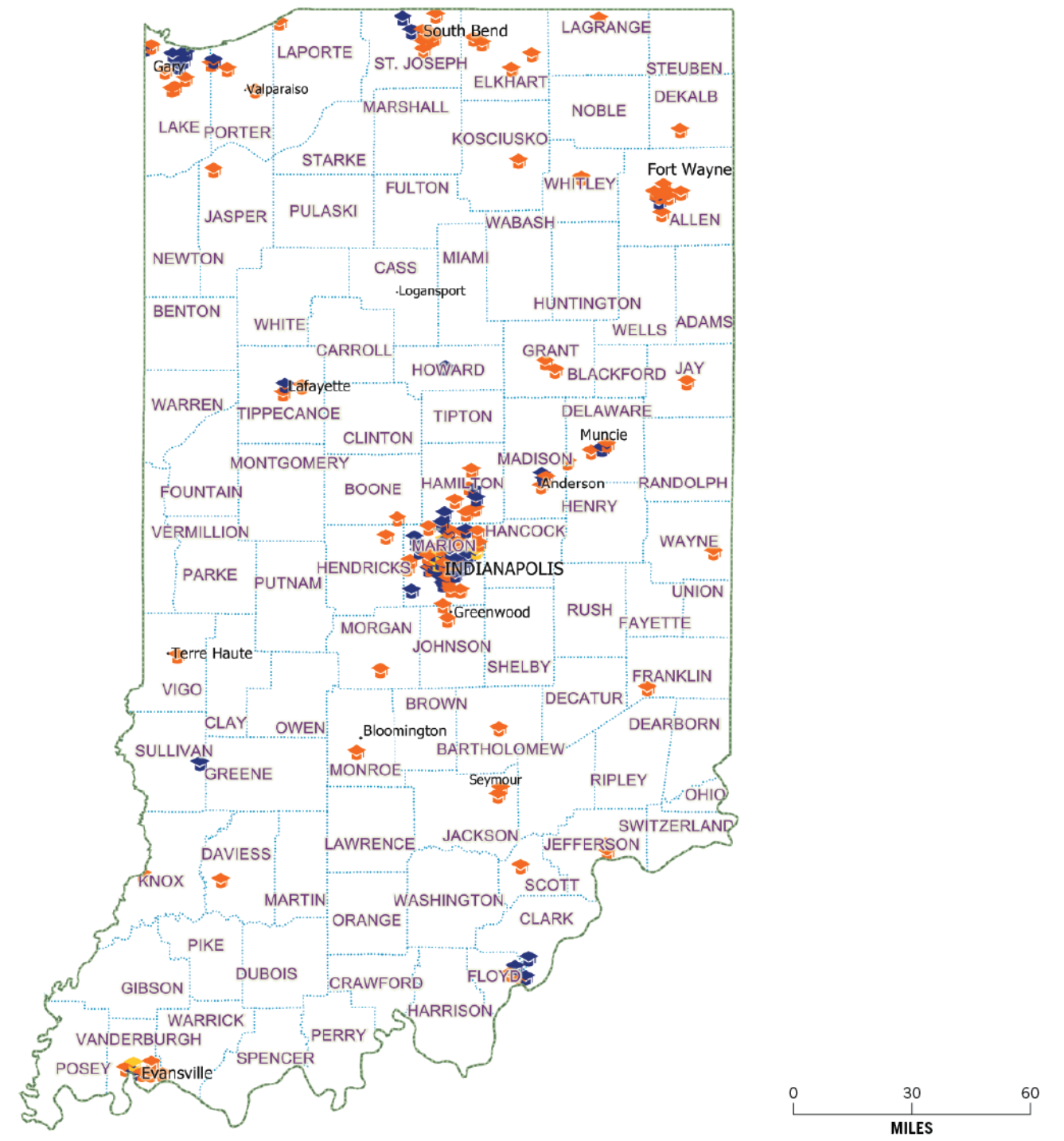
Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

Note: Schools identified are charter, magnet, and voucher-participating schools serving at least one grade K–8.

FIGURE 3

Choice Schools (9–12)

Choice schools are lacking at the high school level compared with K–8 schools



Created 6/7/18 by Drew Catt (EdChoice)

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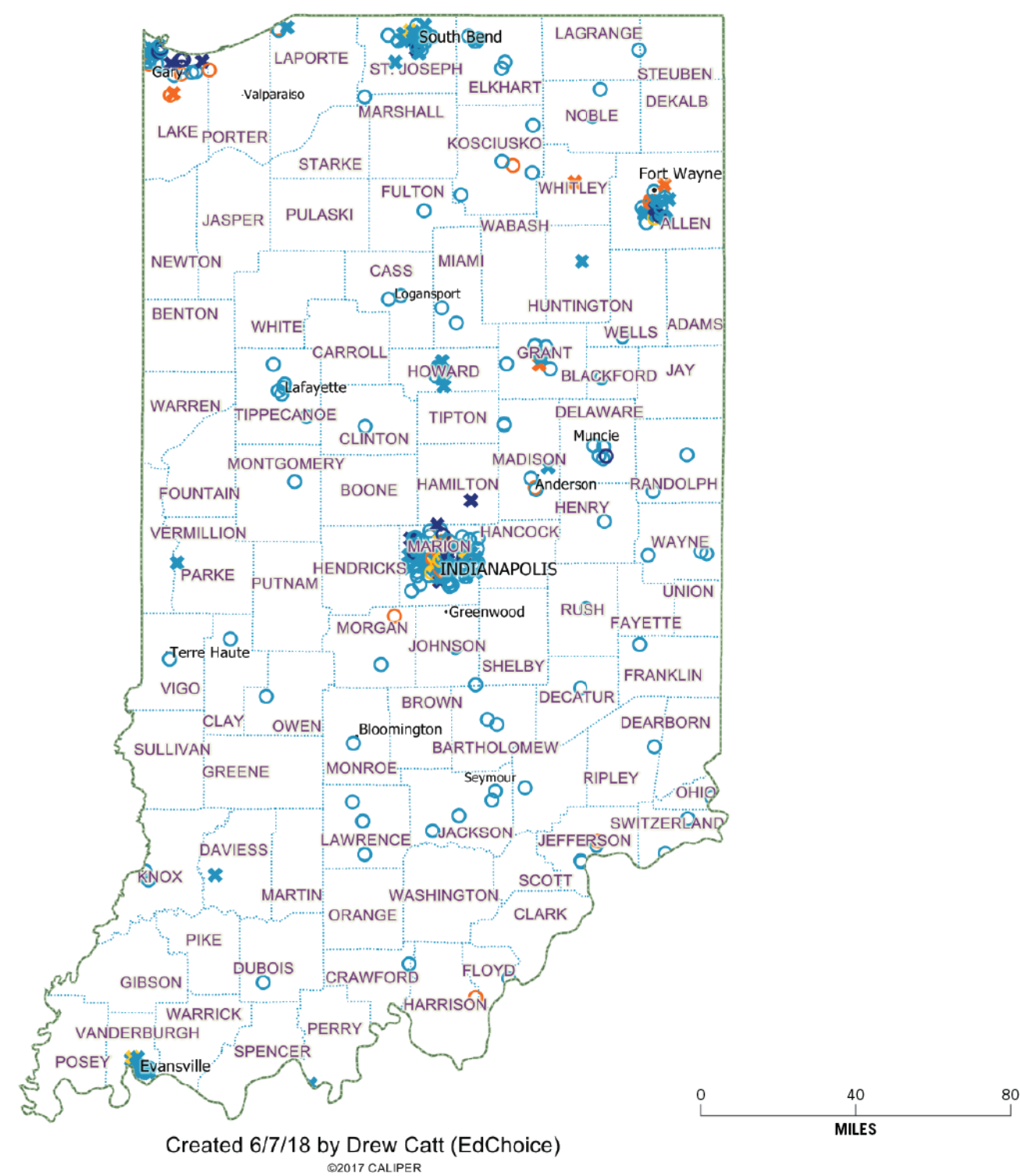
SCHOOLS RATED IN 2016–17

9–12 Charter (n=57)
 9–12 Magnet (n=5)
 9–12 Voucher (n=93)

Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

Note: Schools identified are charter, magnet, and voucher-participating schools serving at least one grade 9–12.

FIGURE 4 D- and F-Rated Schools by Sector (K–8)
The ratio of D and F schools varies by sector, but the distribution appears to be statewide at the K–8 level



SCHOOLS "D" OR "F" RATED IN 2016–17

○ K–8 "D" Traditional Public (n=154)	○ K–8 "D" Charter (n=11)	○ K–8 "D" Magnet (n=5)	○ K–8 "D" Voucher (n=14)
× K–8 "F" Traditional Public (n=77)	× K–8 "F" Charter (n=12)	× K–8 "F" Magnet (n=5)	× K–8 "F" Voucher (n=8)

Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>
 Note: Schools identified serve at least one grade K–8.

FIGURE 5 D- and F-Rated Schools by Sector (9–12)
The distribution of poorly rated high schools is almost entirely within urban areas



SCHOOLS "D" OR "F" RATED IN 2016–17

○ 9–12 "D" Traditional Public (n=5)	○ 9–12 "D" Charter (n=6)	○ 9–12 "D" Magnet (n=1)	○ 9–12 "D" Voucher (n=6)
× 9–12 "F" Traditional Public (n=4)	× 9–12 "F" Charter (n=10)	× 9–12 "F" Magnet (n=2)	× 9–12 "F" Voucher (n=6)

Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>
 Note: Schools identified serve at least one grade 9–12.

LITERATURE REVIEW

Outside of its traditional definition as a geographical feature lacking precipitation, the term “desert” more recently gained prevalence to describe a community area with a lack of access to food and grocery retailers.¹⁹ While early studies focused on intra-urban areas with little or no access to healthy food options, continued work has found divides across community type as well as income.²⁰

Healthcare deserts provide another useful example. In fact, the infrastructure and government planning requirements for publicly funded schools and K–12 education policy may be more akin to large medical facility placement than the location of corporate and family-owned markets, which are more influenced by standard supply and demand curves.

Regarding K–12 school choice, others have pioneered the use of Census and school location data to map access to intra-district public and private schools.²¹ The largest access factor is community type (rural vs. urban/suburban), although sector differences also are present. Commute times for people using public transit within specific urban areas also provide a useful measure of access in cities with public school choice policies.²²

Other research has looked at lack of access to charter schools, finding the political boundaries of cities and urban school districts tend to limit the number of low-income residents who can access charter schools.²³ This finding may be more related to states’ charter school policies—including those permitting charter placement as well as those related to facility and transportation funding—than families’ proximity to charter schools.

However, existing work on school access that used Census and school location data does not take into account state board of education-assigned school letter grades. This project is the first to our knowledge that incorporates assigned school letter grade options, both as an individual component and in the context of school choice. In addition, the

statewide focus on access to non-traditional public school choice and educational opportunity zones provides an expansive view of educational access in Indiana.

Similar to other forms of “community deserts,” school choice deserts in Indiana tend to exist in rural and/or low-income communities. While Hoosiers, on average, are not far from A-rated schools or any charter, magnet, or voucher-participating schools, certain communities are left with few or no options.²⁴

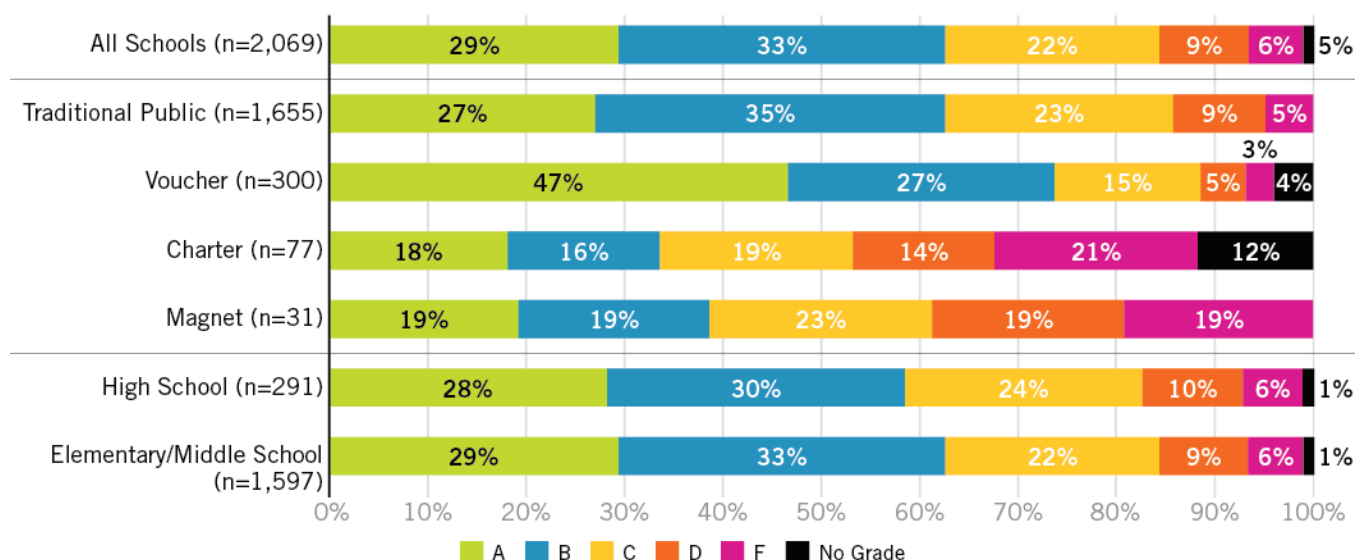
METHODS AND DATA

These maps and analyses focus on drive-time distances to describe the portions of Indiana that are with and without reasonable access to various types of schools: A-rated schools; any charter, magnet, or voucher-participating schools. We also use maps to showcase educational opportunity zones—areas of the state where students seem to have reasonable access only to poorly rated schools—and point out that these are the parts of the state in dire need of improving existing options and/or investing in new, highly rated schooling options.

While 29 percent of 2017–18 Indiana schools (609 of 2,069 schools) received an “A” rating during the 2016–17 school year, ratings differed by school type, as seen in Figure 6 on page 14.²⁵ Using drive-times from all A-rated schools, as well as A-rated schools by sector and grade level, various A-rated “deserts” appear across the state.

Traditional public schools make up a majority of the state’s school population, so it is no surprise that they comprise a similarly high proportion of A-rated schools overall.²⁶ This population advantage affects average drive times to A-rated schools when broken down by school sector.

A-rated schools of each sector type were plotted on a statewide map, with proximity calculated from these locations. This process was replicated

FIGURE 6**Schools by Sector and Grade Assigned***Nearly half of the voucher-participating schools received an "A" rating in 2016–17*

Sources: : Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

Note: Does not include two traditional public K-terminal schools, three closed traditional public schools (one due to redistricting), and five private schools not participating in the voucher program in 2017–18.

to locate where Hoosier families do not have reasonable access to any charter, magnet, or voucher-participating school, as well as where there is a lack of highly rated schools and choice.

The locations and grades (or lack thereof) of all schools that educate publicly funded K–12 students in the state were downloaded from the Indiana Department of Education's website, although we did remove the two state-run schools that respectively serve students who are blind and visually impaired and students who are deaf and hard of hearing from the dataset.²⁷ We used the 2018 US streets and 2018 block group shapefiles available from Maptitude for mapping drive-time distances and estimating related populations.

Mapping Technology and Defining "Distance"

Using Maptitude Geographic Information System (GIS) software, road maps for Indiana, locations of Indiana schools that educate publicly funded students, and 2018 block groups linked

to 2016 American Community Survey (ACS) five-year estimates, we calculated drive times in one-minute, two-minute, and three-minute bands for students and families living in a given geographically weighted census block group from a given school.²⁸ Block groups are made up of an average of 40 census blocks and generally contain between 600 and 3,000 people.²⁹ Of the 220,180 block groups available for the United States, we analyzed the 5,020 located in Indiana in the 2018 block group file from Maptitude for this project. For the joined 2016 data set, the ACS estimates are based on a rolling average of 5.1 percent of Indiana's housing units and 7.7 percent of Indiana's total population.³⁰ The methodology for this research builds on previous school choice-related research through the utilization of network proximity by looking at the state's road network, allowing for distances to be computed in drive times, and looking at a variety of drive-time distances and not just the previously used set mile radii or visual inspection.³¹

The use of drive-time measures in the analyses yields improved accuracies to school choice access compared to Euclidian distance, or as-

the-crow-flies distance, which is a standard yet less-useful measure for families who are expected to make reasonable decisions in an educational marketplace. After all, we don't know anyone who commutes to school in a perfectly straight line. Factoring road type, historical traffic conditions, speed limits, and other variables can more reasonably pinpoint which communities most need increased educational options.³²

Our analyses focused on the above variables to calculate the network distance rather than the as-the-crow-flies distance. We use a 30-minute drive-time distance using a federal dataset and from survey research.

Drive times of more than 30 minutes from any A-rated school are an unusual occurrence in Indiana.

Based on 2016 ACS five-year estimates at the block group level, less than 1 percent of K–8 students (5- to 14-year-olds in the dataset) live more than 27 minutes from an “A” K–8 school, and less than 1 percent of high school students (15- to 19-year-olds in the dataset) live more than 32 minutes from an “A” high school. Although the majority of K–12 students in Indiana attend traditional public schools, less than 1 percent of K–8 students live more than 36 minutes from any charter, magnet, or voucher-participating school serving any grades K–8, and less than 1 percent of high school students live more than 48 minutes from any charter, magnet, or voucher-participating school serving any high school grades. Moreover, based on survey responses from more than 2,000 Indiana families, at least nine out of 10 students spend 30 minutes or less travelling to school one-way, regardless of sector.³³ These factors formed the rationale for denoting a “desert” as greater than or equal to a 30-minute drive from each type of schooling trait plotted: A-rated schools and all charter, magnet, and voucher-participating schools.

The educational opportunity zones showcased in the final results section highlight poorly rated traditional public schools in areas without reasonable access to charter, magnet, or voucher-participating schools that are not D- or F-rated.³⁴ Because the traditional public schools in these zones received low state letter grades they would potentially not be permitted to accept new students if subjected to similar standards as the state's voucher criteria, making an even stronger case for increasing options in these areas.

Parents are likely to exhibit various tolerances for maximum one-way drive times to their child's school. As such, each drive-time map includes a legend and color gradient that correspond to a range of drive times for the measure observed, with areas meeting or exceeding the 30-minute boundary demarcated with red lines.

Limitations

There are limits to using state ratings to map families' access to schools. Recent polling indicates parents do not rank standardized testing as a high priority when discerning their children's school quality, relative to other factors.³⁵ Moreover, a recent cross-sector survey of Indiana families indicates that academics is not the most important reason why traditional public, charter, voucher, or other private school families choose their school.³⁶ However, parents in some choice-rich environments rate public and charter schools higher based on accountability grades, depending on factors, such as income and student grade level.³⁷ Regardless of how widely accepted they are by school leaders, parents, and policymakers and how much of a public signal they are of quality, using the state's A–F rating system and underlying test scores may not be the best measure of overall school quality.³⁸

Drive time was used as the standard distance measure from schools. Of course, many students use public transportation in the form of school buses as well as other forms of public transportation in

urban area—to commute to their schools. But drive time offers a useful and standardized measure for describing distance in the state.³⁹ Some students in border counties may also attend schools across state lines, but these schools would not typically be funded by Indiana and thus are not a useful measure of access in the state.⁴⁰

The drive-time analyses generated for this report also looked at “fastest” routes given historical traffic conditions, road lengths, and speed limits. Actual drive times also vary due to temporary construction and inclement weather. Therefore, we assume that all deserts and related data are cautious estimates. The use of block groups instead of home addresses also introduces some potential noisiness by calculating slightly less precise distances than if we were to use actual street numbers for each population analyzed. Moreover, using 2016 ACS five-year estimates means that we are not viewing static data like we would be if we were to use 2010 Census data, and we are using a much smaller sample size. Using the five-year rolling estimates, we can access Indiana’s grade level attending estimates based on a rolling average of 8.4 percent of the population and Indiana’s income estimates based on a rolling average of 16.8 percent of the population.⁴¹

We plotted schools by grade levels served to compare access among primary and secondary students. To do this, drive-times were calculated from A-rated schools and then non-traditional schools serving any grades in the K–8 range, with this replicated for the 9–12 range. This method, while useful for comparing primary to secondary access, does not necessarily account for options for every K–12 grade level for every student.

This analysis also does not consider school capacity, which would be critical data for policymakers and educational entrepreneurs when considering where to invest in existing schooling options to increase their rating, increase their capacity, and/or place new schooling options. The maps generated for this brief nevertheless provide an important look at access and scarcity in the Hoosier State’s robust school choice environment.

RESULTS

A–Rated Deserts

In recent years, A–F public school rating systems have gained steam in some states as a means of standardizing accountability and attempting to measure school quality.⁴² These grades are often overwhelmingly determined by state standardized testing. While test scores may not be a powerful predictor of later-life outcomes sought by the education process, educators, and policymakers can and often do use these grades to make decisions about schools.⁴³ Indiana provides a unique environment for comparing public, charter, and private voucher-participating schools across the A–F accountability system. Not all Hoosiers, though, have the same access to the highest-rated schools.

While they use multiple sources of information to grade a school’s quality, including word-of-mouth, websites like GreatSchools, and—not least of all—their child’s’ feedback, parents may also find accountability grades useful. This can be the case when a parent is choosing a private or charter school, as well as when researching school districts when purchasing a home.⁴⁴

What the Maps Show

The maps that follow show drive times from *any* A-rated traditional public, charter, magnet, or voucher-participating private school. We took all A-rated traditional public, charter, magnet, and voucher-participating private schools and generated drive-time rings in one-minute intervals from each of the applicable schools and then changed the 30 to 31-minute band to bright red to denote the desert boundary.

The red lines denote the boundaries of areas 30 minutes or more from *any* A-rated school, regardless of sector—A-rated deserts. The families that live in those A-rated deserts do not live within 30 minutes of any of the highest-rated traditional

public, charter, magnet, or voucher-participating schools in the state and are most likely attending a lower-rated school.

In addition to breaking A-rated schools out by sector, we deemed it important to also separate out A-rated schools by grades served. Of the 609 A-rated schools, 488 schools (80%) serve at least one grade K–8 and 159 schools (26%) serve at least one grade 9–12. There were 38 schools that served grades in both categories, which is why those percentages do not total to 100 (see Appendix 1 on page 47).

K–8

There were a total of 609 traditional public (449), charter (14), magnet (6), and voucher-participating (140) schools in the dataset that served at least one grade K–8 in 2017–18 and were A-rated in 2016–17. Drive-time analysis shows that all K–8 students (ages 5–14 using ACS estimates) live within a maximum potential drive time of 45 minutes from at least one of those schools. However, an estimated 3,699 K–8 students (0.42%) live in “A-rated deserts”—30 minutes or more from any of those highly rated traditional public, charter, magnet, or voucher-participating schools.

Those K–8 A-rated deserts are mostly in the following areas (see Figure 7 on p. 19):

- **Switzerland** and **Jefferson** counties in the southeastern part of the state
- A small portion of **Crawford** County in southern Indiana
- A southwest portion of **Knox** County in southwestern Indiana
- Small parts of **Warren** and **Newton** counties in northwestern Indiana
- A sizeable desert in northwestern Indiana between Indianapolis and Chicago in **Miami**, **Cass**, **White**, **Jasper**, **Starke**, **Pulaski**, and **Fulton** counties

Within all K–8 A-rated deserts live an estimated 2,070 FRL-eligible families, which is 0.5 percent of that population and similar to the percentage of non-FRL-eligible families. There are also 6,158 families who would be income-eligible for a 50 percent voucher, which is 0.6 percent of that population—a higher percentage than the 0.5 percent of families that would not be income-eligible who also live in the K–8 A-Rated Deserts.

When looking at maximum potential drive-time distances of K–8 students (ages 5 to 14 in the ACS data) from any A-rated K–8 school, the maximum potential drive time is 45 minutes, and the drive time for the median of the K–8 population is six to seven minutes (see Appendix 2 on page 49). Here are the maximum potential drive times for K–8 students for A-rated K–8 schools by sector:

- 45 minutes for the 352 traditional public schools,
- 93 minutes for the 121 voucher-participating schools,
- 140 minutes for the nine charter schools, and
- 246 minutes for the six magnet schools.

Ninety percent of Indiana youth that are between 5 and 14 years old live within 15 minutes of any A-rated K–8 school. Here is the breakdown by sector:

- 18 minutes for the 352 traditional public schools,
- 31 minutes for the 121 voucher-participating schools,
- 92 minutes for the nine charter schools, and
- 147 minutes for the six magnet schools.

Although it is paramount to discuss all families when talking about equitable drive times from A-rated schools, we thought it also important to look at drive times for families with students eligible for the federal free and reduced-price lunch program. The federal free and reduced-price lunch program income limit for 2017–18 was \$37,777 for a family of three.⁴⁵ We took a conservative approach and used a limit of \$35,000 to define FRL-eligible families for this project, combining the ACS variables of “Family Income: <\$10K,” “Family Income: \$10K–\$14,999,” “Family Income: \$15K–\$24,999,” and “Family Income: \$25K–\$34,999.” Indiana’s Choice Scholarship program requires families to be FRL-eligible in order to receive a 90 percent voucher, although there are other eligibility criteria beyond income.⁴⁶

When looking at drive-time distances of FRL-eligible families from any A-rated K–8 school, the maximum potential drive time is 45 minutes, and the drive time for the median of this population is six to seven minutes (see Appendix 2). Here are the maximum potential drive times for FRL-eligible families for A-rated schools serving at least one grade K–8 by sector:

- 48 minutes for the 352 traditional public schools,
- 93 minutes for the 121 voucher-participating schools,
- 160 minutes for the nine charter schools, and
- 246 minutes for the six magnet schools.

Ninety percent of Indiana’s FRL-eligible families live within 16 minutes of any A-rated school serving at least one grade K–8. Here is the breakdown by sector:

- 19 minutes for the 352 traditional public schools,
- 33 minutes for the 121 voucher-participating schools,
- 94 minutes for the nine charter schools, and
- 147 minutes for the six magnet schools.

Indiana’s Choice Scholarship program requires families to earn no more than 150 percent of the federal free and reduced-price lunch (FRL) program income limit in order to receive a 50 percent voucher, although there are other eligibility criteria beyond income.⁴⁷ The federal free and reduced-price lunch (FRL) program income limit for 2017–18 is \$37,777 for a family of three, and 150 percent of that amount is \$56,666.⁴⁸ We took a conservative approach and used a limit of \$50,000 to define families income-eligible for a 50 percent voucher for this project.

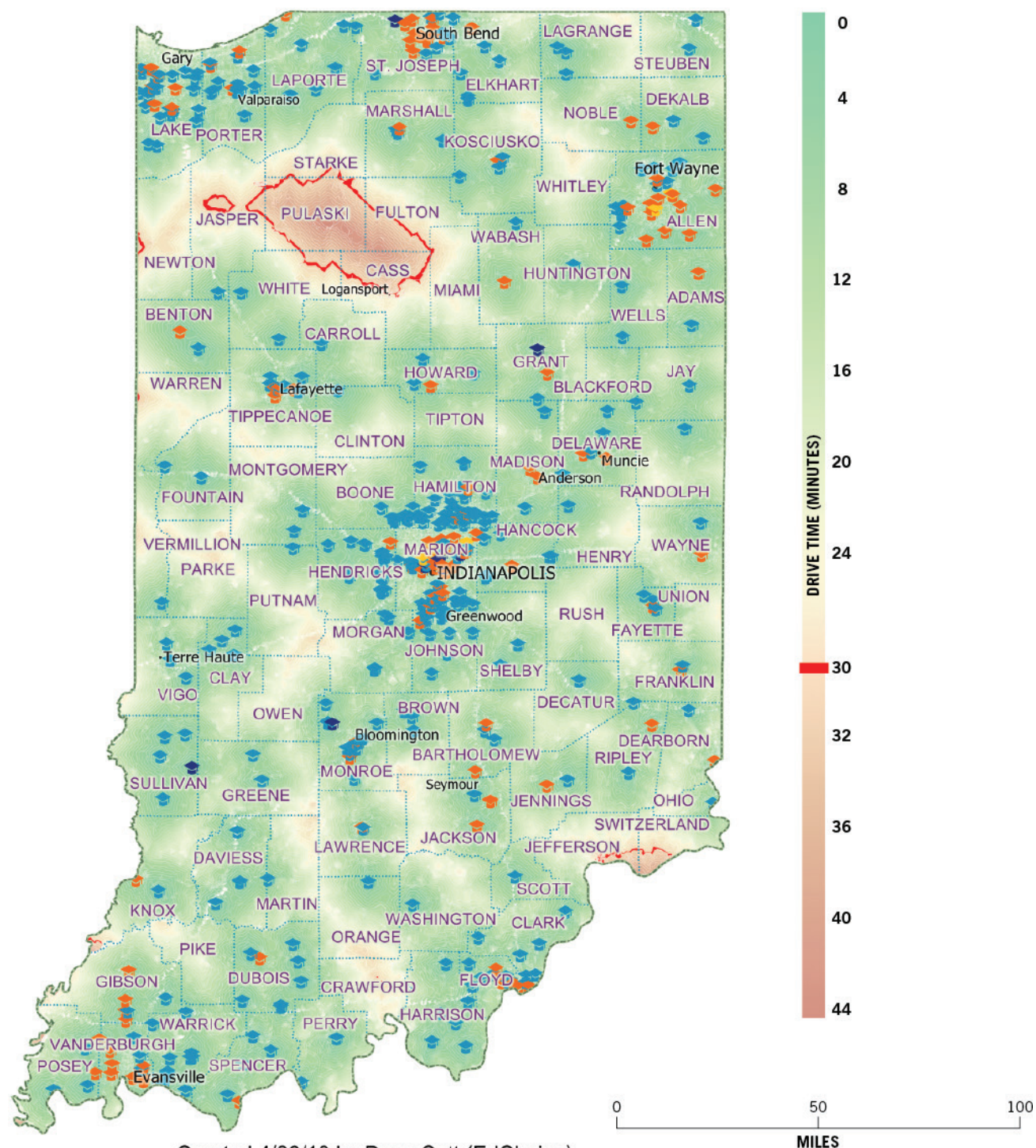
The average Indiana families (based on average family size) who are income-eligible for a 50 percent voucher live within the same maximum potential drive times from any A-rated school serving at least one grade K–8, including by sector, as families eligible for a 90 percent voucher, as well as for 90 percent of that population (see Appendix 2). This is intriguing because we did not anticipate the maximum potential drive times to be the same for populations of different sizes. According to the ACS data, 38 percent of Indiana families are income-eligible for a 50 percent voucher, while a comparatively lesser 24 percent are income-eligible for a 90 percent voucher.

Ninety percent of Indiana’s families income-eligible for a 50 percent voucher live within 16 minutes of any A-rated school serving at least one grade K–8. The only sector-specific departure from FRL-eligible families is an increase in the charter sector to 96 minutes for the nine applicable charter schools.

FIGURE 7

A-Rated Deserts (K-8)

An estimated 3,699 primary students live without reasonable access to A-rated K-8 schools



SCHOOLS SERVING AT LEAST ONE GRADE K-8 "A" RATED IN 2016-17

- K-8 Traditional Public (n=352)
- K-8 Voucher (n=121)
- K-8 Charter (n=9)
- K-8 Magnet (n=6)

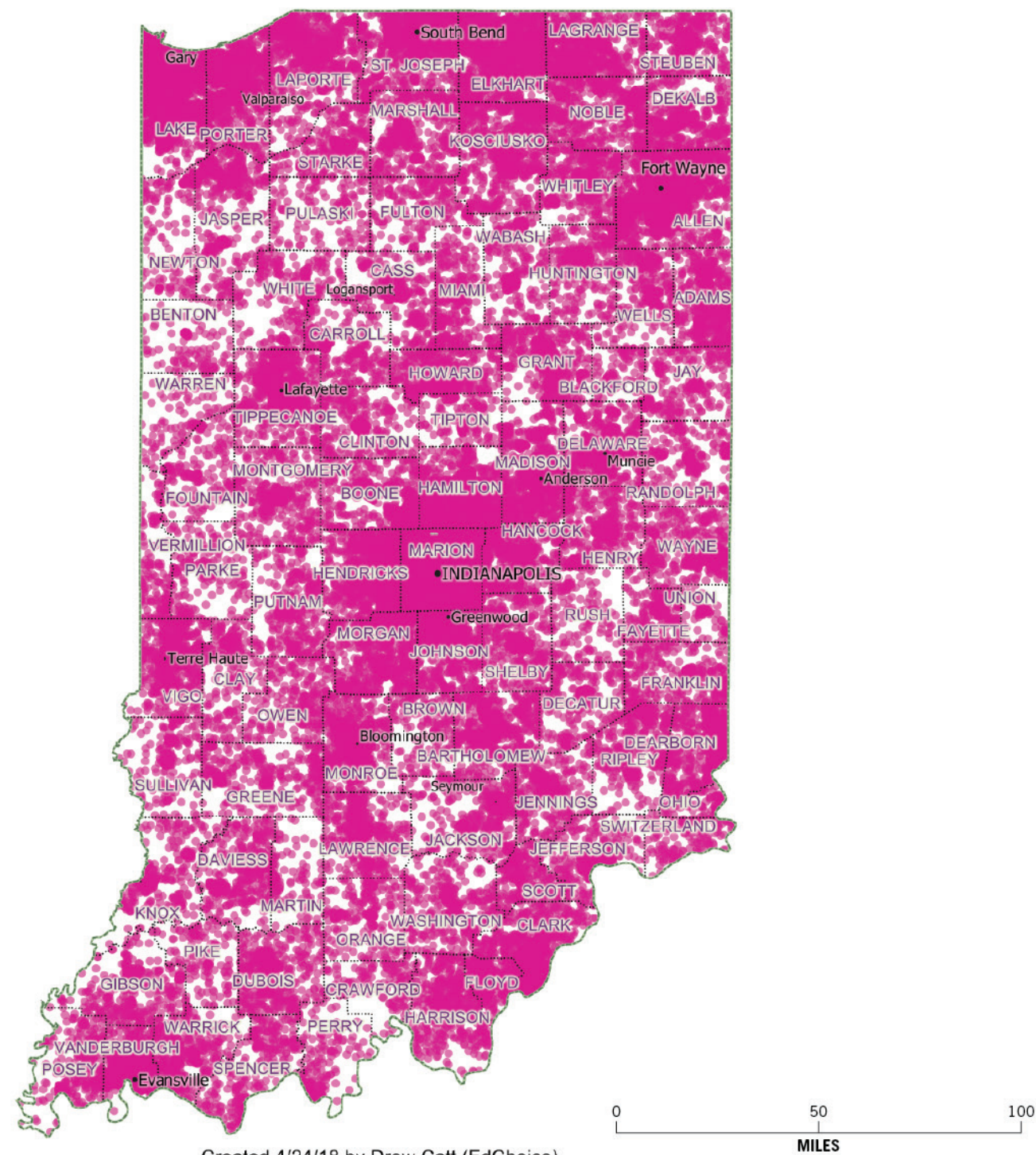
Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>; 2016 American Community Survey 5-Year Estimates

Notes: Schools identified serve at least one grade K-8 and received an "A" grade in 2016-17. Does not include two traditional public K-terminal schools, three closed traditional public schools (one due to redistricting), and five private schools not participating in the voucher program in 2017-18.

FIGURE 8

Distribution of K-8 Students

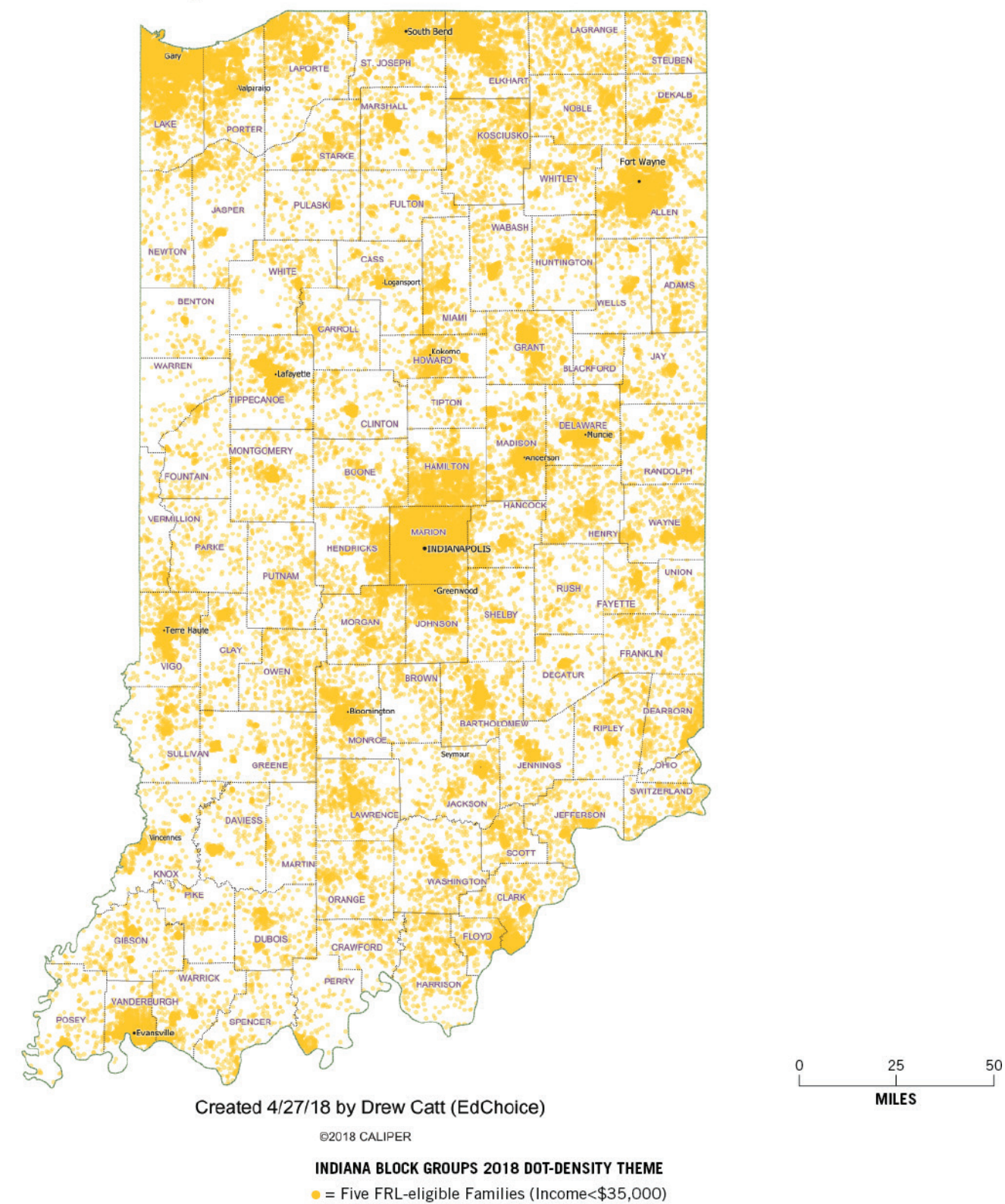
Overlap of various deserts exists within medium- and low-density areas



Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates

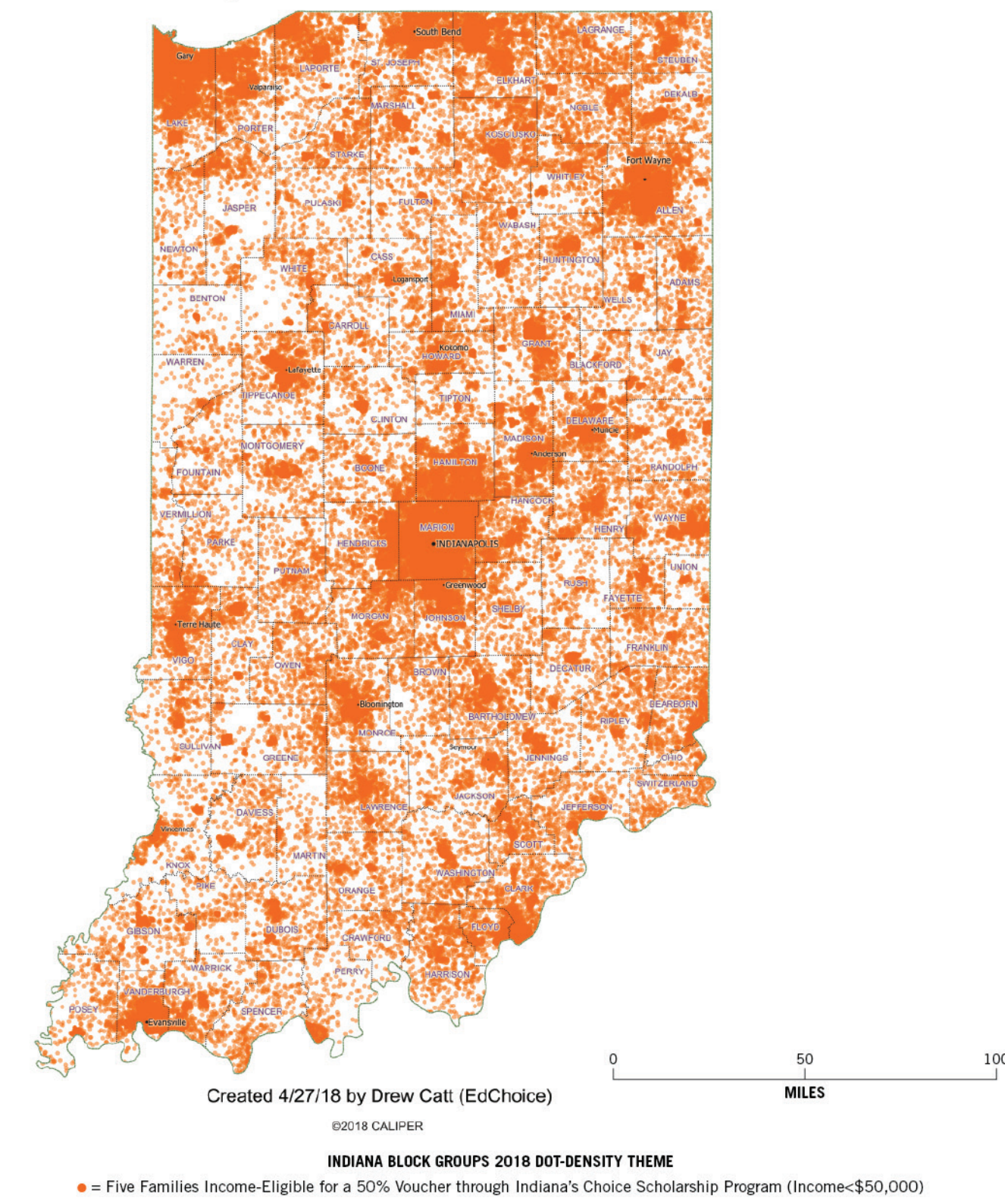
Note: Dots appear randomly within a given block group.

FIGURE 9 Distribution of Free and Reduced-Price Lunch (FRL) Eligible Families
The close proximity of urban FRL eligible families to various schools likely affects drive-time differences of all FRL-eligible families



Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates
 Notes: FRL eligibility denoted at the \$35,000 mark. Dots appear randomly within a given block group.

FIGURE 10 Distribution of Families Income-Eligible for a Voucher
The close proximity of urban income-eligible families to various schools likely affects drive-time differences of all income-eligible families



Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates
 Notes: Families eligible for a 50 percent voucher through Indiana's Choice Scholarship Program. Income eligibility denoted at the \$50,000 mark. Dots appear randomly within a given block group.

High School

There were a total of 159 traditional public (119), charter (7), and voucher-participating (33) schools in the dataset that served at least one high school grade (9–12) in 2017–18 and were A-rated in 2016–17. Additionally, as can be surmised from the omission in the previous list, there are not any A-rated magnet schools that serve high schoolers. Drive-time analysis shows that all high school students (ages 15–19 using ACS estimates) live within a maximum potential drive time of 45 minutes from at least one of those schools. However, an estimated 6,668 high school students (1.5%) live in A-rated deserts—30 minutes or more from any of those highly-rated traditional public, charter, magnet, or voucher-participating schools.

Those high school A-rated deserts are mostly in the following areas (see Figure 11 on p. 25):

- The northeastern-most portion of the state in **Steuben** and **DeKalb** counties
- The eastern part of the state in **Union**, **Fayette**, and **Rush** counties
- The southeastern-most portion of the state in parts of **Dearborn**, **Ohio**, **Switzerland**, **Jefferson**, **Scott**, **Jennings**, and **Ripley** counties
- **Perry**, **Crawford**, **Spencer**, and **Orange** counties in southern Indiana—potentially exacerbated by the presence of Hoosier National Forest
- **Knox** County in southwestern Indiana
- Parts of **Martin**, **Lawrence**, **Monroe**, **Bartholomew**, **Brown**, and **Morgan** counties in south-central Indiana—potentially exacerbated by the presence of Brown County State Park
- Parts of **Owen** and **Clay** counties in western Indiana
- A large desert in western Indiana from **Clay** and **Vigo** counties up through **Parke** and **Vermillion** counties to **Montgomery**, **Fountain**, and **Warren** counties

- Parts of **Newton** and **Jasper** counties in northwest Indiana.
- Parts of **Pulaski**, **Fulton**, **Wabash**, and **Elkhart** counties in northern Indiana

An estimated 7,223 FRL-eligible families live within all high school A-rated deserts, which is 1.8 percent of that population compared to 1.6 percent of non-FRL-eligible families. There also are 11,776 families who would be income-eligible for a 50 percent voucher, which is 1.9 percent of that population—a higher percentage than the 1.5 percent of families that would not be income-eligible who also live in A-rated high school deserts.

When looking at drive-time distances of high school students (ages 15 to 19 in the ACS data) from any A-rated high school, the maximum potential drive time is 56 minutes, and the drive time for the median of the high school population is 12 minutes (see Appendix 2). Here are the maximum potential drive times for high school-aged Hoosiers for A-rated high schools by sector:

- 55 minutes for the 119 traditional public schools,
- 112 minutes for the 33 voucher-participating schools, and
- 140 minutes for the seven charter schools.

Since drive times are calculated in one-minute bands, the discrepancy between maximum potential drive times for any A-rated school serving high schoolers and applicable traditional public schools is most likely due to different portions of a block group falling into the maximum potential drive-time band of one but not the other, resulting in different populations falling into one band but not the other—one of the drawbacks of the block group populations being geographically weighted.

Ninety percent of Indiana high schoolers live within 21 minutes of any A-rated high school. Here is the breakdown by sector:

- 22 minutes for the 119 traditional public schools,
- 60 minutes for the 33 voucher-participating schools, and
- 88 minutes for the seven charter schools.

When looking at drive-time distances of FRL-eligible families from any A-rated high school, the maximum potential drive time is 56 minutes, and the drive time for the median of this population is 10 minutes. (See Appendix 2.) Here are the maximum potential drive times for Hoosier families who are FRL-eligible for A-rated high schools by sector:

- 55 minutes for the 119 traditional public schools,
- 112 minutes for the 33 voucher-participating schools, and
- 140 minutes for the seven charter schools.

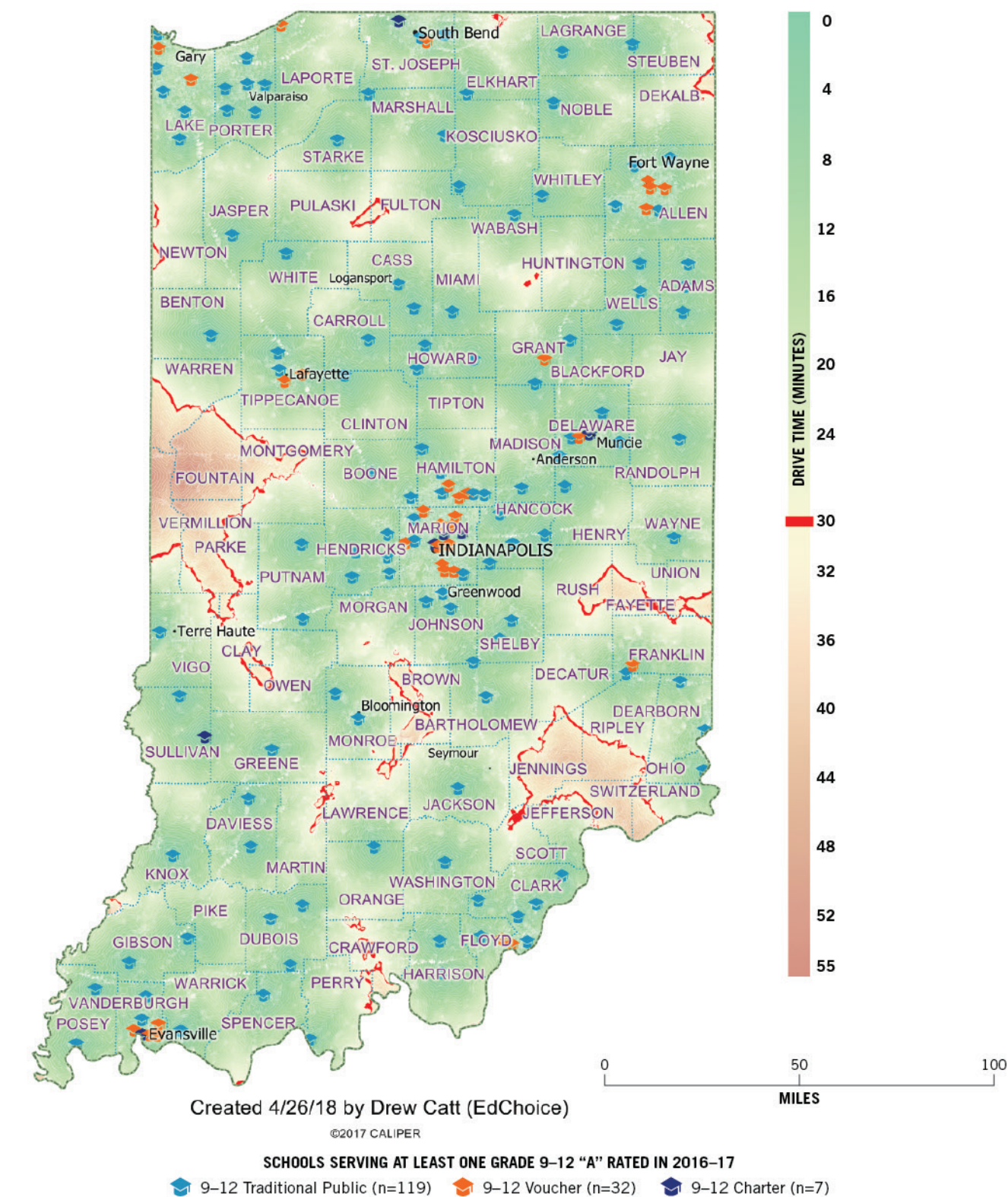
Ninety percent of Indiana FRL-eligible families live within 22 minutes of any A-rated high school. Here is the breakdown by sector:

- 23 minutes for the 119 traditional public schools,
- 60 minutes for the 33 voucher-participating schools, and
- 88 minutes for the seven charter schools.

When looking at drive-time distances of families income-eligible for a 50 percent voucher from any A-rated high school, the maximum potential drive times are the same as for families income-eligible for a 90 percent voucher, including by sector (see Appendix 2).

Drive-time distances for 90 percent of families income-eligible for a 50 percent voucher from any A-rated high school, the maximum potential drive times are the same as for 90 percent of FRL-eligible families, including by sector. (See Appendix 2.)

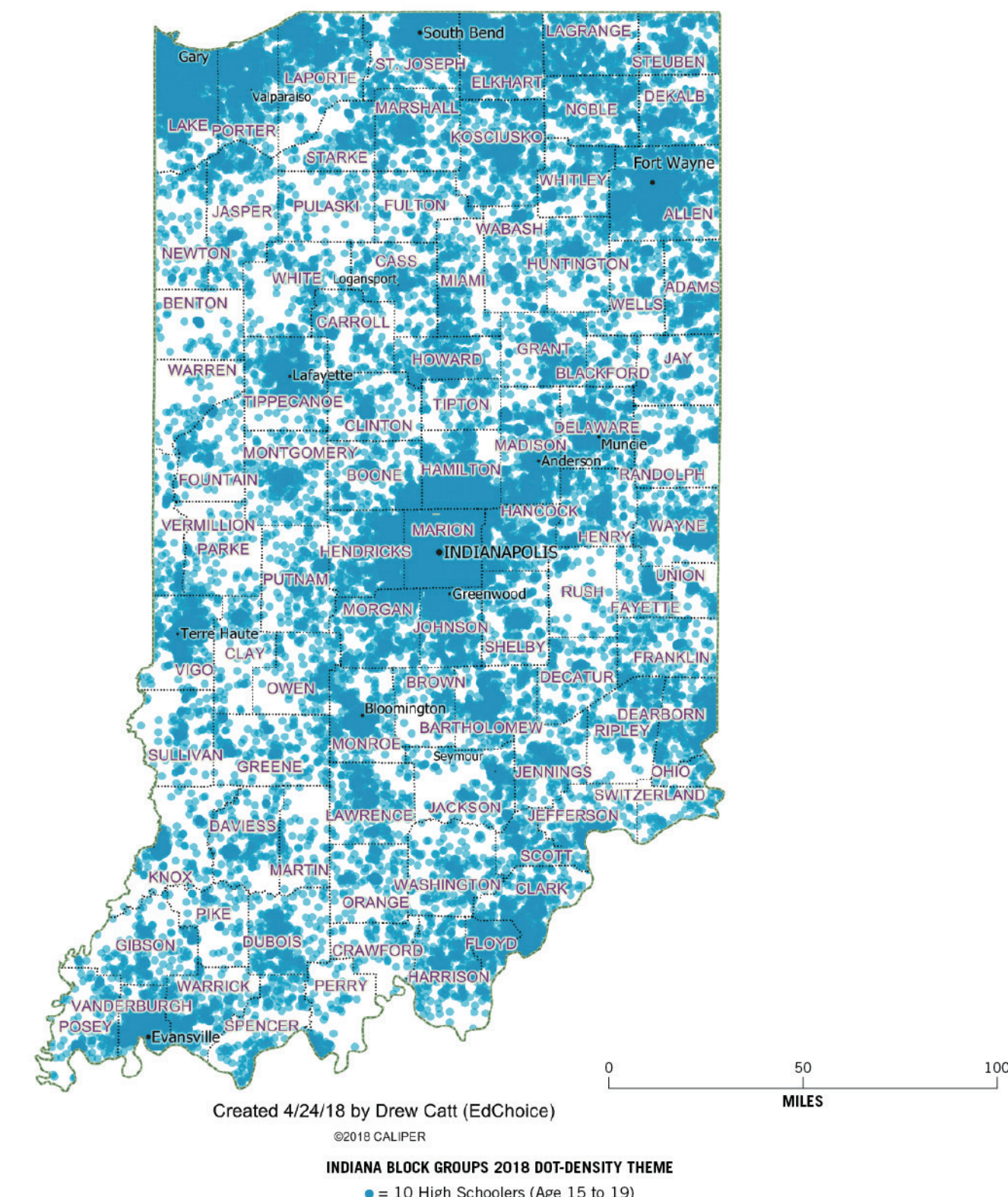
FIGURE 11 A-Rated Deserts (9–12)
An estimated 6,668 secondary students live without access to A-rated high schools



Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>; 2016 American Community Survey 5-Year Estimates

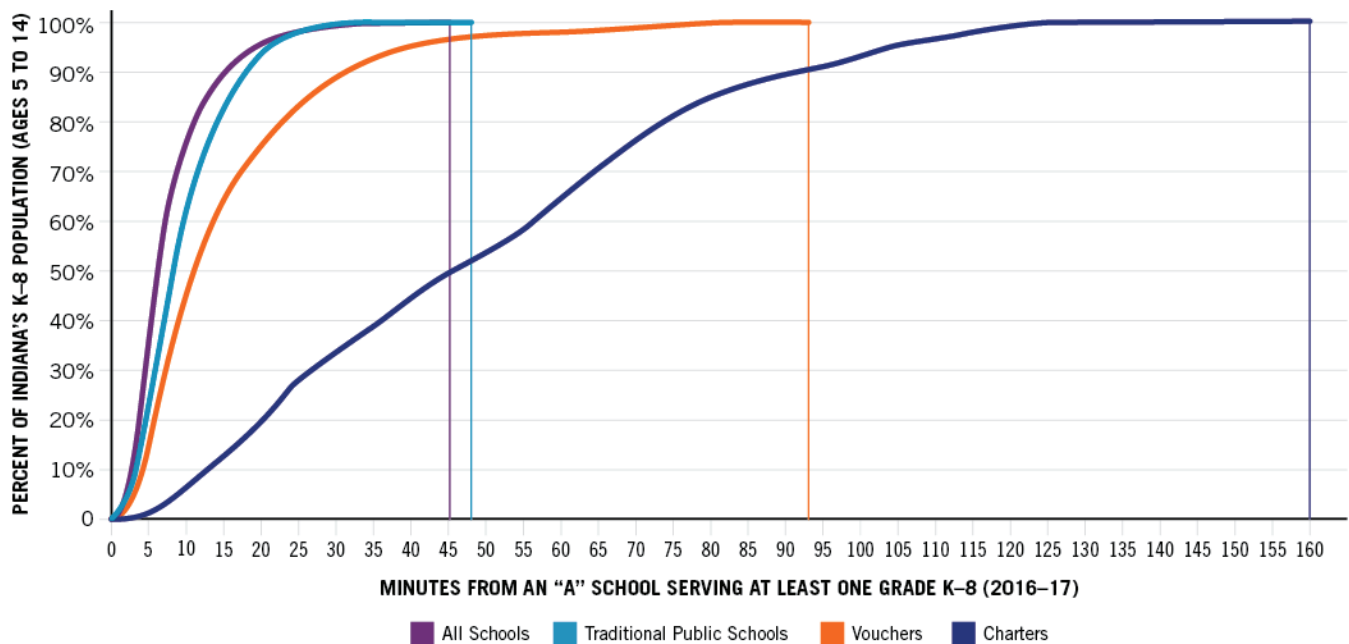
Notes: Schools identified serve at least one grade 9–12 and received an “A” grade in 2016–17. Does not include two traditional public K-terminal schools, three closed traditional public schools (one due to redistricting), and five private schools not participating in the voucher program in 2017–18.

FIGURE 12 Distribution of High Schoolers
Overlap of various deserts exists within medium- and low-density areas



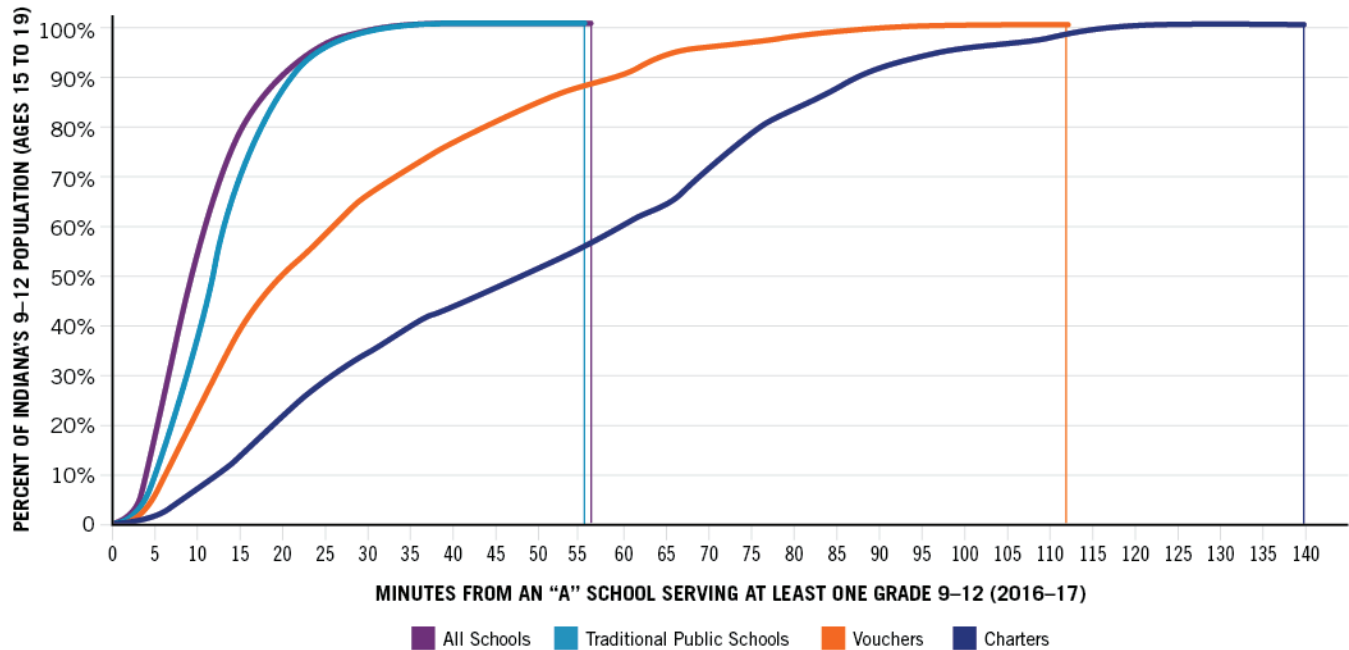
Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates

Note: Dots appear randomly within a given block group.

FIGURE 13**A-Rated Drive Times by Sector (K–8)***Nine out of 10 students live within 15 minutes of an A-rated K–8 school*

Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates

Notes: Distances are for Indiana students ages 5 to 14 from a school rated "A" in 2016–17 serving at least one grade K–8. Magnet schools (n=6) are included in "All Schools" but not subtypes.

FIGURE 14**A-Rated Drive Times by Sector (9–12)***Nine out of 10 students live within 21 minutes of an A-rated high school*

Sources: Authors' calculations; 2016 American Community Survey 5-Year Estimates

Notes: Distances are for Indiana students ages 15 to 19 from a school rated "A" in 2016–17 serving at least one grade 9–12. Discrepancies between "All Schools" and "Traditional Publics" are most likely due to a small portion of a block group falling into the maximum potential drive time of one but not the other, resulting in the entire block group being included in one and not the other.

Choice Deserts

The majority of Indiana K–12 students attend the traditional public schools assigned to them based on their residence.⁴⁹ But a student's assigned school may not be the best fit for them. This forms part of the bedrock of the economic theory of school choice.⁵⁰ Despite Indiana's robust school choice environment—which includes private school vouchers, tax-credit scholarships, inter-district and intra-district enrollment, magnet schools, and charter schools—families in certain Hoosier communities are not left with reasonable educational access other than the traditional public school to which their children are assigned based on the location of their residence.

What if the school letter grades assigned by the Indiana State Board of Education do not matter to parents, and they just want an option other than the assigned school down the street because they can't afford to move—or for a variety of other reasons?

What the Maps Show

The two maps that follow show drive times from any charter, magnet, and voucher-participating schools—regardless of rating or lack thereof. We took all charter, magnet, and voucher-participating schools (see Table 1 on p. 29) and generated drive-time rings in one-minute intervals from each of the applicable schools and then changed the 30 to 31-minute band to bright red to denote the desert boundary.

In general terms, the red lines denote the boundaries of areas 30 minutes or more from *any* charter, magnet, or voucher-participating school—choice deserts. The families that live in choice deserts are not within 30 minutes of any of the charter, magnet, or voucher-participating schools in the state and, unless they are utilizing inter- or intra-district transfer options, are most likely attending their ZIP code-assigned traditional public school.

K–8

There were a total of 395 charter (75), magnet (28), and voucher-participating (292) schools in the dataset that served at least one grade K–8 in 2017–18 (see Table 1 on p. 29). Drive-time analysis shows that all K–8 students (ages 5–14 using ACS estimates) live within 56 minutes of at least one of those schools. However, an estimated 24,810 K–8 students (2.8%) live in K–8 choice deserts—30 minutes or more from *any* of those charter, magnet, or voucher-participating schools.

Those K–8 choice deserts are mostly in the following areas (see Figure 15 on p. 30):

- Northeastern **Steuben** County in the northeastern-most part of the state
- **Wells** and **Randolph** counties in eastern Indiana
- **Switzerland**, **Jefferson**, and **Clark** counties in the southeastern part of the state
- A large strip of desert that runs from almost the entirety of **Perry** County in southern Indiana up to **Vermillion** and **Montgomery** counties in western Indiana
- A large desert between Indianapolis and Chicago in **Miami**, **Fulton**, **Pulaski**, **White**, **Carroll**, and **Cass** counties

An estimated 13,340 FRL-eligible families, which is 3.3 percent of that statewide population, live within K–8 choice deserts. This is comparably higher than the 3.2 percent of non-FRL-eligible families who live in K–8 choice deserts. There also are 22,092 families who would be income-eligible for a 50 percent voucher, which is 3.5 percent of that statewide population. That is comparably higher than the 3.0 percent of families that would not be income-eligible who live in K–8 choice deserts.

TABLE 1

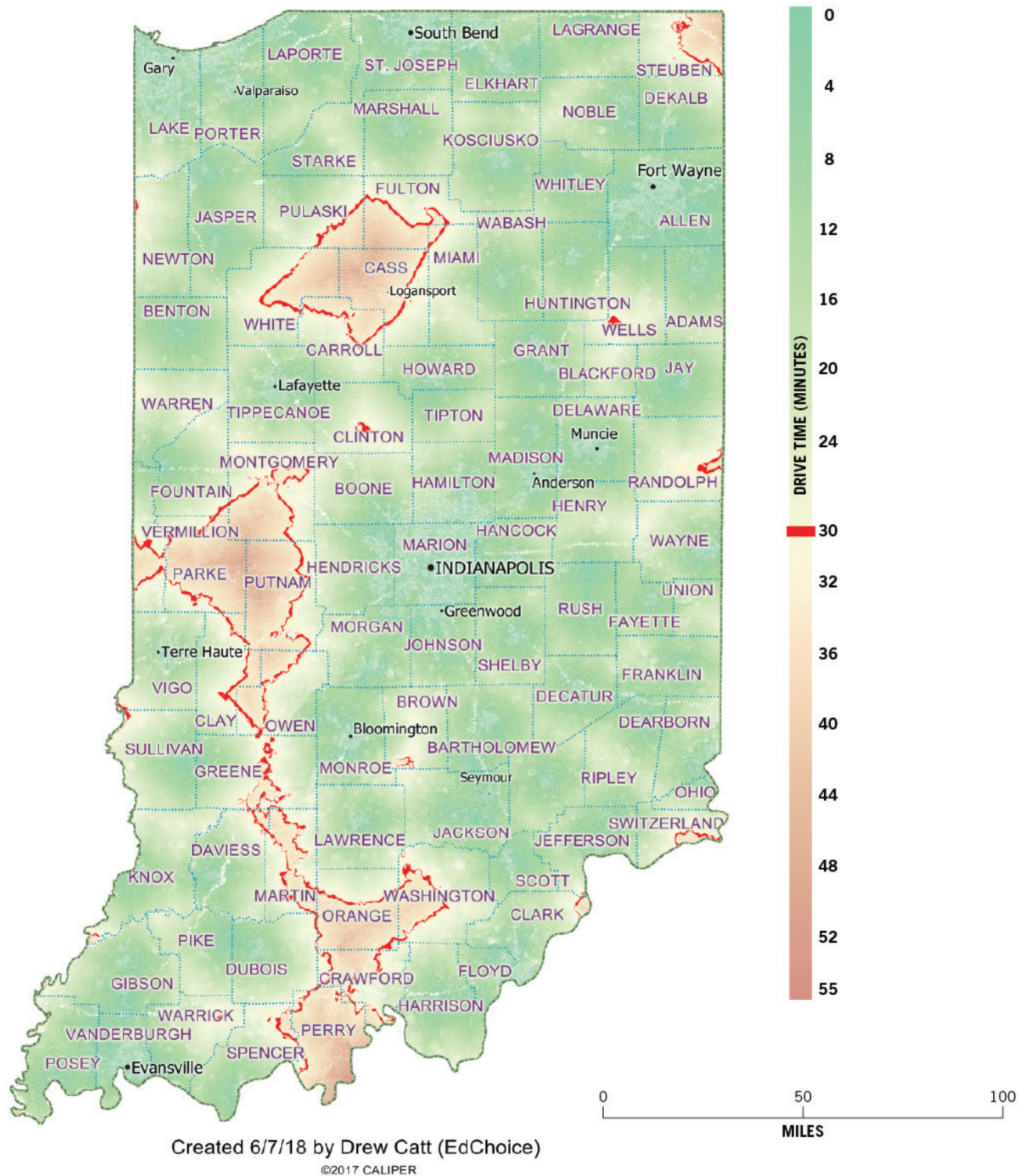
Schools Included in Choice Desert Drive-Time Analyses by Rating

	Charter	Magnet	Voucher- Participating	Total
K-8	75	28	292	395
"A"	9	6	121	136
"B"	12	4	79	95
"C"	14	7	44	65
"D"	11	5	14	30
"F"	12	5	8	25
"No Grade"	9	0	12	21
Missing Grade (null)	8	1	14	23
High School	57	5	93	155
"A"	7	0	33	40
"B"	4	2	20	26
"C"	7	0	13	20
"D"	6	1	6	13
"F"	10	2	6	18
"No Grade"	1	0	3	4
Missing Grade (null)	22	0	12	34

Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

FIGURE 15**Choice Deserts (K–8)**

An estimated 24,810 primary students live without reasonable access to a K–8 school of choice



Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

Note: Drive times from any charter, magnet, or voucher-participating school serving at least one grade K–8.

High School

There were a total of 155 charter (57), magnet (5), and voucher-participating (93) schools in the dataset that served at least one high school grade (9–12) in 2017–18. Drive-time analysis shows that all high school students (ages 15–19 using ACS estimates) live within 80 minutes of at least one of those schools. However, an estimated 45,072 high school students (9.8%) live in high school choice deserts—30 minutes or more from *any* of those charter, magnet, or voucher-participating schools.

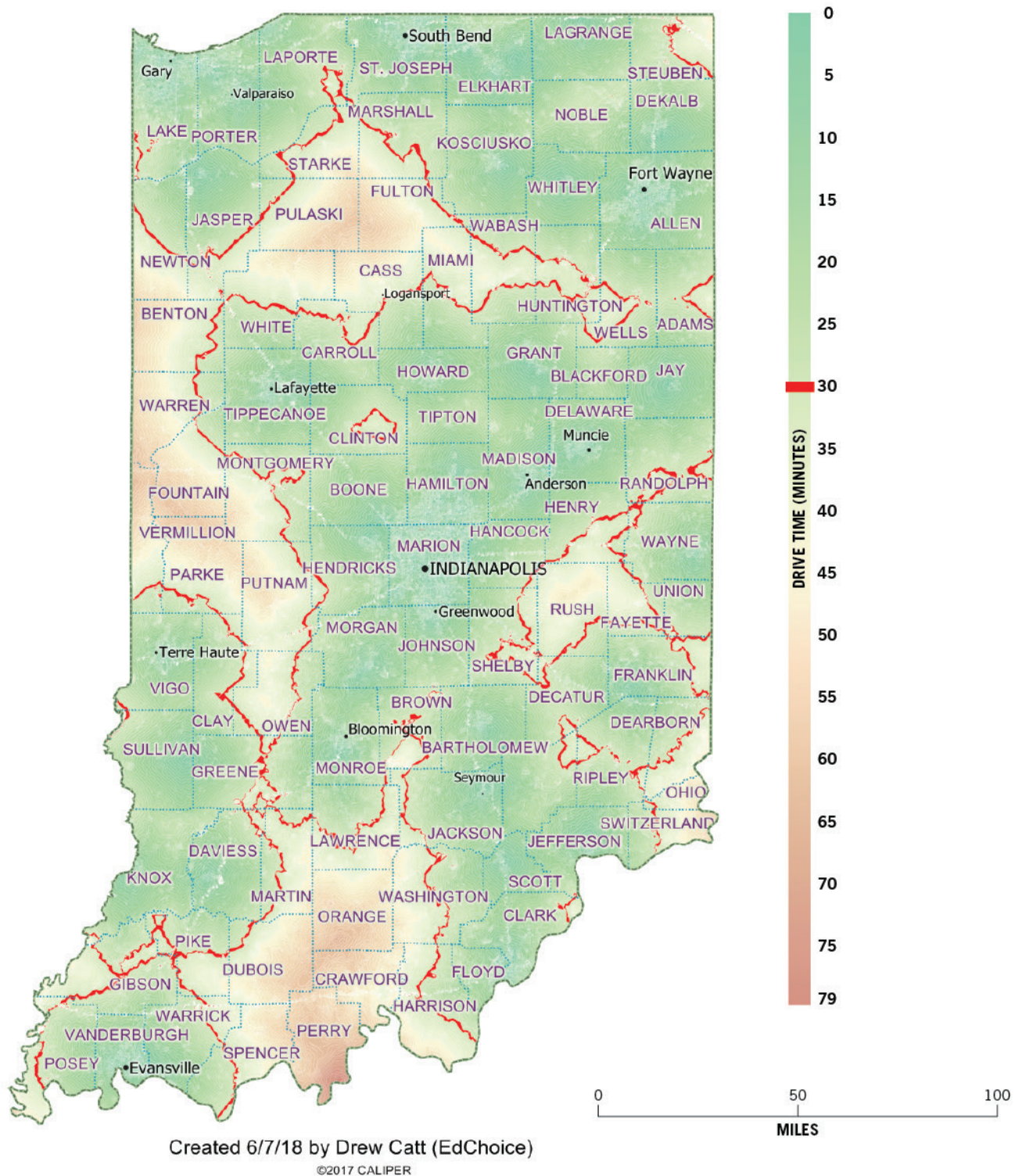
Those high school choice deserts are mostly in the following areas (see Figure 16):

- Northeastern **Steuben** County in the northeastern-most part of the state
- **Wells**, **Adams**, and **Randolph** counties in eastern Indiana
- A strip of desert that runs from **Henry** County in eastern Indiana southwest through parts of **Hancock**, **Rush**, **Shelby**, and **Decatur** counties
- **Franklin**, **Dearborn**, **Ripley**, **Jennings**, **Ohio**, and **Switzerland** counties in the southeastern part of the state
- A large desert that runs from a generous portion of **Harrison** County in southern Indiana over to **Spencer** County and around Evansville to **Posey** County and also up through the entirety of **Perry**, **Crawford**, and **Orange** counties up to **Brown** County.
- A large desert that starts in **Greene** County in southwestern Indiana and goes up through **Putnam**, **Parke**, **Montgomery**, **Fountain**, **Vermilion**, **Warren**, **Benton**, and **Newton** counties northwest of Lafayette and then east to **Wabash** County and parts of **Huntington** County in northeast Indiana and north to **LaPorte** County in northeastern Indiana—this includes the area between Indianapolis and Chicago in **Miami**, **Fulton**, **Marshall**, **Starke**, **Pulaski**, **White**, **Carroll**, and **Cass** counties

An estimated 44,619 FRL-eligible families live within high school choice deserts, which is 11.3 percent of that statewide population. That is comparably higher than the 10.64 percent of non-FRL-eligible families who live in high school choice deserts. There are also 73,745 families who would be income-eligible for a 50 percent voucher, which is 11.6 percent of that statewide population. That is comparably higher than the 10.27 percent of families that would not be income-eligible who live in high school choice deserts.

FIGURE 16**Choice Deserts (9–12)**

An estimated 45,072 secondary students live without reasonable access to a high school of choice



Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

Note: Drive times from any charter, magnet, or voucher-participating school serving at least one grade 9–12.

Educational Opportunity Zones

This last mapping section attempts to focus on areas where students seem to have reasonable access only to a poorly rated school. These educational opportunity zones provide opportunities for entrepreneurs, educators, and policymakers to invest in placing new highly rated schooling options of various sectors or improve those that currently exist for Hoosier families. In other words, the educational opportunity zones are where change can happen at the community level and not just the individual or family level—because every student in these zones could seemingly benefit from improved and/or new educational options.

Indiana attempts to limit voucher families' options only to those private schools that meet the state's accountability standards, acting as a "controlled choice" system rather than the truly universal voucher system that Milton Friedman proposed in 1955.⁵¹ According to Indiana Code 20-51-4-9, "D" and "F" ratings affect participating voucher-participating schools in the following manner:

- A voucher-participating school designated a "D" or "F" school for two consecutive years will receive a one-year suspension from accepting new voucher students.
- A voucher-participating school designated a "D" or "F" school for three consecutive years cannot accept new voucher students until it receives a "C" or higher for two consecutive years.
- A voucher-participating school designated an "F" school for three consecutive years cannot accept new voucher students until receiving a "C" or higher for three consecutive years.

However, even if a school does meet one of the above criteria, it may still submit a request to the State Board of Education for a waiver or postponement of consequences for a particular school year.⁵²

What if families who are looking for an option other than their traditional public school don't want their children to transfer to a D- or F-rated voucher, charter, or magnet school? In fact, as we just noted, depending on the number of years a voucher-participating school has received a "D" or "F" rating, they may not even be able to take new students.

And where are the families who are potentially the greatest in need—those who do not want their children to attend any D- or F-rated school, regardless of sector? While not completely congruent to the voucher accountability system—traditional public schools in Indiana must earn an "F" rating four consecutive years before facing state closure or takeover, as compared to private schools that cannot accept voucher students after earning a "D" or "F" rating for two consecutive years—these maps attempt to plot Indiana's schooling landscape on a similar playing field.

What the Maps Show

The two final maps, like the two previous maps, have drive times from charter, magnet, and voucher-participating schools—except that all D- and F-rated charter, magnet, and voucher-participating schools were removed from the sets prior to running the drive-time analyses. This resulted in 55 fewer charter (23), magnet (10), and voucher-participating (22) schools serving at least one grade K–8 and 31 fewer charter (16), magnet (3), and voucher-participating (12) schools serving at least one high school grade being used to map drive-time distances (see Table 2). We then generated drive-time rings in one-minute intervals from each of the applicable schools and changed the 30 to 31-minute band to bright red to denote the desert boundary. We downloaded and plotted the shapefiles from the federal School Attendance Boundary Survey (SABS) from the National Center for Education Statistics (NCES) and plotted all "D" and "F" traditional public schools serving at least one grade K–8 and at least one high school grade

TABLE 2**Schools Included in Drive-Time Analyses by Rating**

	Charter	Magnet	Voucher-Participating	Total
K-8	52	18	270	340
"A"	9	6	121	136
"B"	12	4	79	95
"C"	14	7	44	65
"No Grade"	9	0	12	21
Missing Grade (null)	8	1	14	23
High School	41	2	81	124
"A"	7	0	33	40
"B"	4	2	20	26
"C"	7	0	13	20
"No Grade"	1	0	3	4
Missing Grade (null)	22	0	12	34

Source: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

(9–12) to see if any had school attendance boundaries contained within or overlapping one or more of the resulting desert boundaries. All school attendance boundaries contained within or touching a desert boundary were identified via visual inspection and shaded on the maps.

In general terms, the red lines denote the boundaries of areas 30 minutes or more from any charter, magnet, or voucher-participating school not rated “D” or “F” and shaded areas inside of these boundaries are where students live who are zoned to attend a D- or F- rated traditional public school. These shaded areas inside of the red desert boundaries are the areas where families potentially are “trapped” in low-rated public schools and also are unable to reasonably access a voucher-participating, charter, or magnet school without a similar rating. These are the state’s educational opportunity zones.

K-8

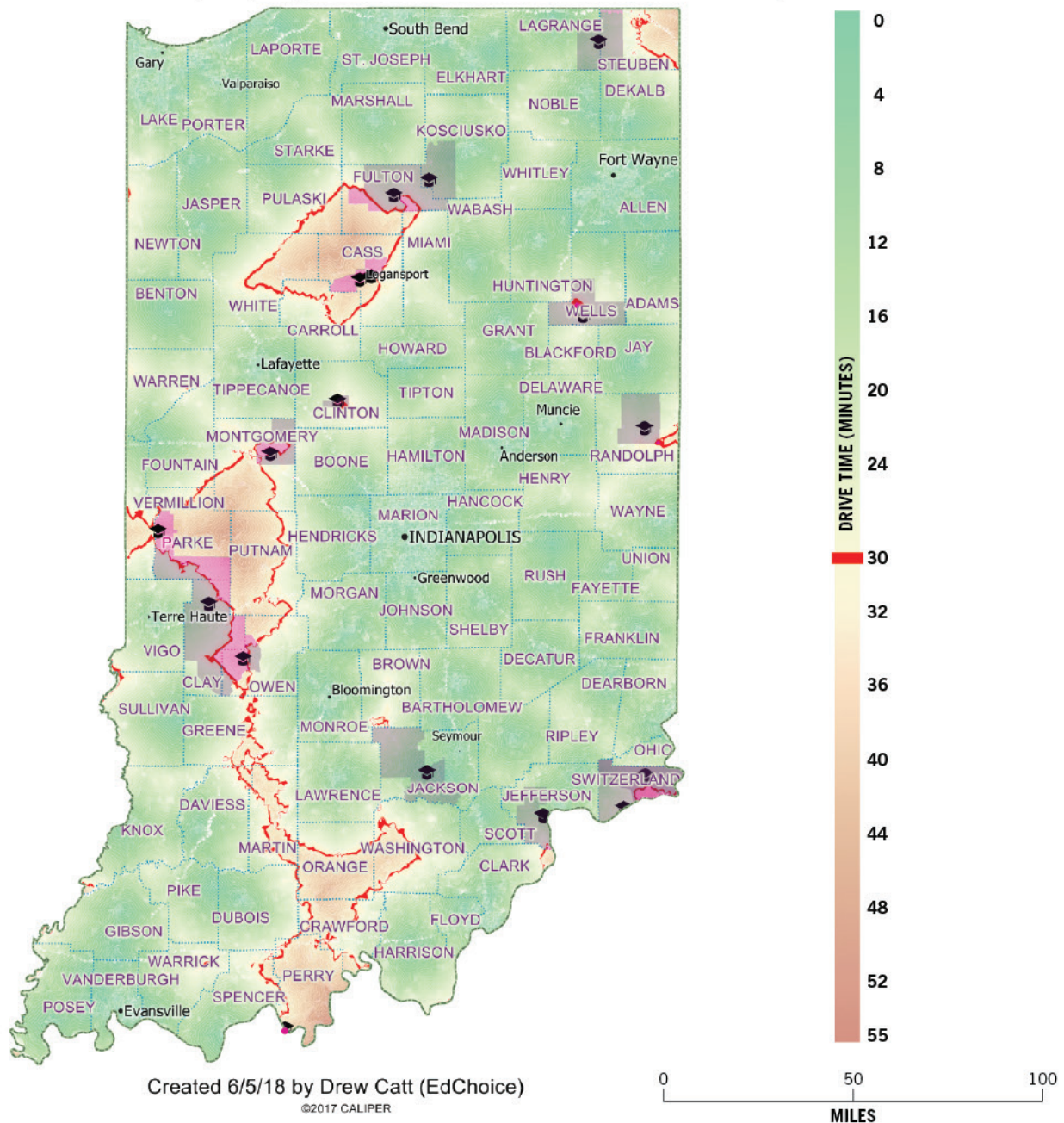
There were a total of 340 charter (52), magnet (18), and voucher-participating (270) schools in the dataset that served at least one grade K–8 in 2017–18 but were not rated “D” or “F” in 2016–17. Drive-time analysis shows that all K–8 students (ages 5–14 using ACS estimates) live within 56 minutes of at least one of those schools. However, an estimated 24,860 K–8 students (2.8%) live in the related deserts—50 more students than live in the K–8 choice deserts.

After mapping all D- and F-rated traditional public schools that served at least one grade K–8 in 2017–18 and their corresponding school attendance boundaries, we visually identified 18 D- or F-rated traditional public schools serving at least one grade K–8 with attendance boundaries completely inside of or partially intersecting the related desert, regardless of size. Those schools are:

- Prairie Heights Elementary School in northeastern Indiana, which is D-rated and is the only Prairie Heights Community School Corporation option for K–4 students.
- Southern Wells Elementary School in the eastern part of northern Indiana, which is D-rated and is the only Southern Wells Community Schools option for K–6 students.
- Lee L Driver Middle School in eastern Indiana, which is D-rated and is the only Randolph Central School Corporation option for students in grades 6–8.
- Switzerland County Elementary School and Switzerland County Middle School in southeastern Indiana, which are both D-rated. The latter is the only Switzerland County School Corporation option for students in grades 7–8, and there is one traditional public school option not rated “D” or “F” for K–6 students within the district—Jefferson-Craig Elementary School (“C”).
- Southwestern Elementary School and Southwestern Middle School in southeastern Indiana, which are both D-rated and, combined, are the only Southwestern Jefferson County Schools options for K–8 students.
- Brownstown Central Middle School in southcentral Indiana, which is D-rated and is the only Brownstown Central Community School Corporation option for students in grades 6–8.
- Cannelton Elementary and High School in southern Indiana, which is F-rated and is the only Cannelton City Schools option.
- Patricksburg Elementary School in western Indiana, which is a D-rated school in Spencer-Owen Community Schools. There are three traditional public school options not rated “D” or “F” for K–6 students within the district: Gosport Elementary School (“B”), McCormick’s Creek Elementary School (“C”), and Spencer Elementary School (“B”).
- Forest Park Elementary School in western Indiana, which is a D-rated school in Clay Community Schools. There are six traditional public school options not rated “D” or “F” for K–5 students within the district: Clay City Elementary School (“B”), East Side Elementary School (“B”), Jackson Township Elementary School (“A”), Meridian Street Elementary School (“A”), Staunton Elementary School (“A”), and Van Buren Elementary School (“A”).
- Montezuma Elementary School in western Indiana, which is an F-rated school in Southwest Parke Community Schools. There is one traditional public school option not rated “D” or “F” for K–6 students within the district: Rosedale Elementary School (“C”).
- Sugar Creek Elementary School, northwest of Indianapolis toward Lafayette, which is a D-rated school in North Montgomery School Corporation. There are two traditional public school options not rated “D” or “F” for K–5 students within the district: Lester B Sommer Elementary School (“C”) and Pleasant Hill Elementary School (“B”).
- Frankfort Middle School, northwest of Indianapolis towards Lafayette, which is D-rated and the only Community Schools of Frankfort option for students in grades 6–8.
- Fairview Elementary School and Landis Elementary School in northern Indiana, which are both D-rated schools in Logansport Community School Corporation. There is one traditional public school option not rated “D” or “F” for K–5 students within the district: Franklin Elementary School (“C”).
- Columbia Elementary School in northern Indiana, which is D-rated and the only Rochester School Corporation option for K–2 students.
- Tippecanoe Valley Middle School in northern Indiana, which is D-rated and the only Tippecanoe Valley School Corporation option for students in grades 6–8 (see Figure 17).

FIGURE 17**Educational Opportunity Zones (K–8)**

An estimated 35,860 primary students live without reasonable access to a non-D or F-rated charter, magnet, or voucher-participating K–8 school, and some of these students live within failing district attendance zones



Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>; National Center for Education Statistics (2015), *School Attendance Boundary Survey: SY 2013–14* [Data file], retrieved from http://s3.amazonaws.com/ED_data/profiledata/SABS_1314.zip; U.S. Census Bureau (2017), *TIGER/Line® Shapefiles: Unified School Districts – Indiana* [Data file], retrieved from ftp://ftp2.census.gov/geo/tiger/TIGER2017/UNSD/tl_2017_18_unsd.zip

Notes: Schools identified serve at least one grade K–8 and did not receive a "D" or "F" grade in 2016–17. The school attendance boundary for Montezuma Elementary School was missing from the federal data set, so the district boundary for Southwest Parke Community School Corporation was used in its place; the school attendance boundaries for Fairview Elementary School and Landis Elementary School were missing from the federal data set, so the district boundary for Logansport Community School Corporation was used in their place.

- There are two “D” or “F” rated public school districts with attendance boundaries inside of or intersecting a K–8 “Non-Failing” Choice Desert:
 - o Cannelton City Schools, which is F-rated
 - o Rochester Community School Corporation, which is D-rated

High School

There were a total of 124 charter (41), magnet (2), and voucher-participating (81) schools in the dataset that served at least one high school grade (9–12) in 2017–18 but were not rated “D” or “F” in 2016–17. Drive-time analysis shows that all high school students (ages 15–19 using ACS estimates) live within 80 minutes of at least one of those schools. However, an estimated 52,661 high school students (11.5%) live in related deserts—7,589 more students than live in the high school choice deserts.

After mapping all D- and F-rated traditional public schools that served at least one high school grade in 2017–18 and their corresponding school attendance boundaries, we visually identified three D- or F-rated traditional public schools serving at least one high school grade with attendance boundaries completely inside of or partially intersecting a related desert, regardless of size. Those schools are:

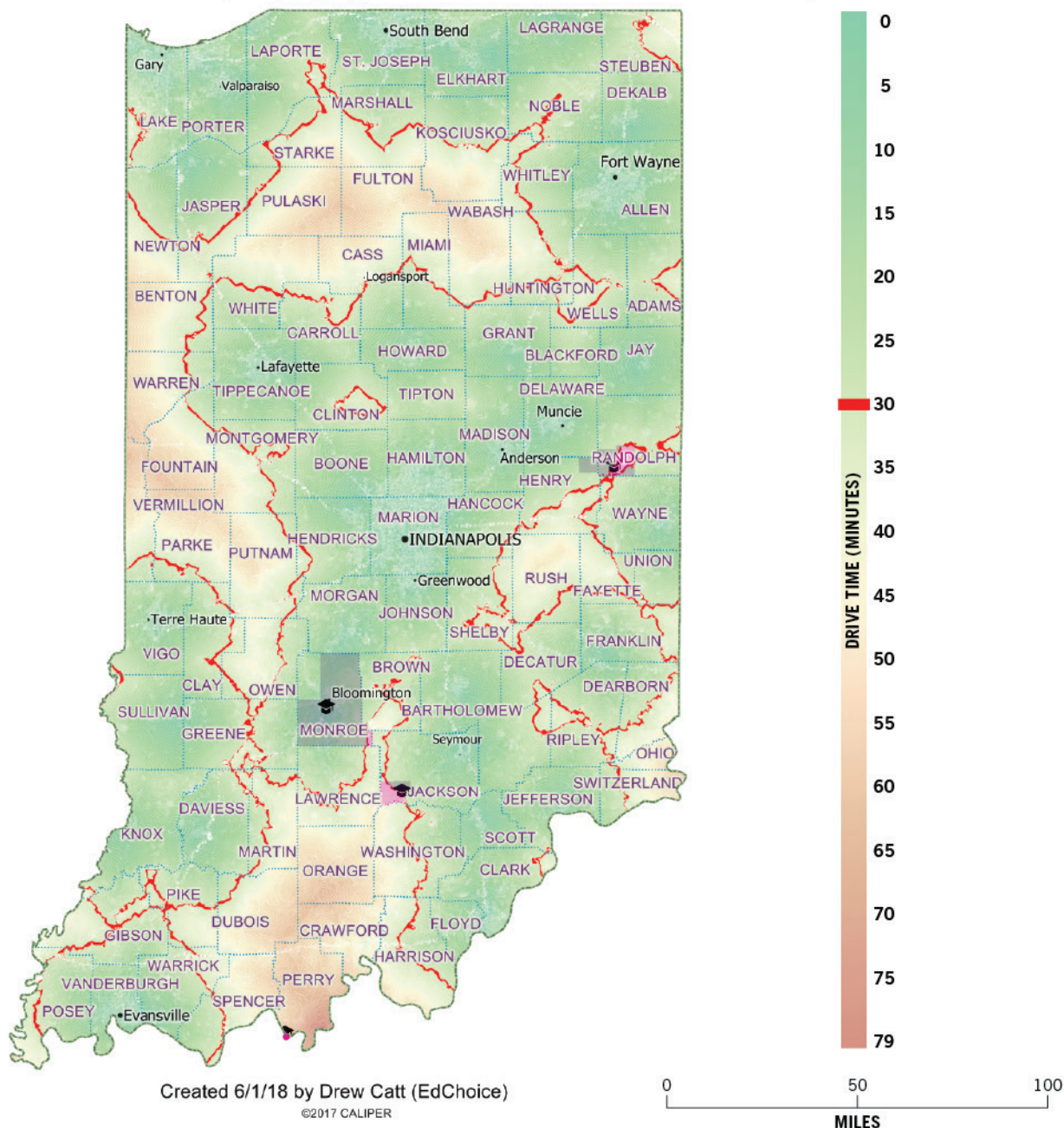
- Union Junior and Senior High School in eastern Indiana, which is D-rated and is the only Union School Corporation option for students in grades 7–12.
- Medora Junior and Senior High School in southern Indiana, which is D-rated and is the only Medora Community School Corporation option for students in grades 7–12.

- Cannelton Elementary and High School in southern Indiana, which is F-rated and is the only Cannelton City Schools option (see District Spotlight on p. 34).
- There are four D- or F-rated public school districts with attendance boundaries inside of or overlapping a High School “Non-Failing” Choice Desert:
 - o Cannelton City Schools, which is F-rated.
 - o Medora Community School Corporation, which is D-rated.
 - o Rochester School Corporation, which is D-rated.
 - o Union School Corporation, which is D-rated.

There is one other school on the map with an attendance boundary partially intersecting a related desert: Bloomington Graduation School in South-Central Indiana, which is a D-rated school in Monroe County Community School Corporation. However, this alternative school uses a Diploma Plus program and is not likely to be the first high school in the district that students attend.⁵³ There are three district options not rated “D” or “F” for high school students: Bloomington High School North (“B”), Bloomington High School South (“A”), and The Academy of Science and Entrepreneurship (“B”).

FIGURE 18**Educational Opportunity Zones (9–12)**

An estimated 52,661 secondary students live without reasonable access from a non-D or F-rated charter, magnet, or voucher-participating high school, and some of these students live within failing district attendance zones

**SCHOOLS "D" OR "F" RATED IN 2016–17**

9–12 with Attendance Boundary in "Non-Failing" Choice Desert (n=4)

TRADITIONAL PUBLIC SCHOOL ATTENDANCE BOUNDARIES 2013–14

Boundaries for Above Schools Opportunity Zone

Sources: Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>; National Center for Education Statistics (2015), *School Attendance Boundary Survey: SY 2013–14* [Data file], retrieved from http://s3.amazonaws.com/ED_data/profiledata/SABS_1314.zip; U.S. Census Bureau (2017), *TIGER/Line® Shapefiles: Unified School Districts – Indiana* [Data file], retrieved from ftp://ftp2.census.gov/geo/tiger/TIGER2017/UNSD/tl_2017_18_unsd.zip

Notes: Schools identified serve at least one grade 9–12 and did not receive a "D" or "F" grade in 2016–17. The school attendance boundary for Bloomington Graduation School was missing from the federal data set, so the district boundary for Monroe County Community School Corporation was used in its place.

District Spotlights

Cannelton City Schools, located on the banks of the Ohio River in Perry County in Southern Indiana, is entirely encompassed by choice deserts in all four maps and is the only “F” rated district in the state of Indiana.⁵⁴ According to the Indiana Department of Education’s database, there is one combined elementary and high school in the district with a PK–12 enrollment of 261 students in 2017–18 and it earned an “F” rating.⁵⁵ However, according to the district’s website, there are two separate schools: Myers Grade School and Cannelton Junior–Senior High School.⁵⁶

In Fall 2017, 100 students from neighboring Tell City–Troy Township School Corporation *transferred into* Cannelton City Schools via parent choice and one student *transferred into* Cannelton City Schools from Perry Central Community Schools Corporation via parent choice. Of the 277 state-funded students with legal settlement in Cannelton City Schools in Fall 2017, 46 percent *transferred out* to schools in a different district via parent choice: 40 students (14.4%) *transferred out* to schools in Perry Central Community Schools Corporation via parent choice and 87 students (31.4%) *transferred out* to schools in neighboring Tell City–Troy Township School Corporation via parent choice. There were seven students (2.5%) that transferred out to a different district for one or more of the following “other” reasons: an agreement between the districts, “better accommodation” agreements or orders, state obligations, or placement by county welfare offices, state courts, state licensed child-placing agencies, etc.

One student (0.4%) *transferred out of the district* via the Choice Scholarship Program to attend St. Bernard Catholic School in Rockport.⁵⁷ That “A” rated K–8 voucher-participating school is slightly more than 30 minutes from Cannelton City Schools when crossing the Ohio River, driving through Kentucky, and crossing the Ohio River back into Indiana. Notably, Cannelton City Schools was the only district in the entire state of Indiana not to have any students transfer out of the district to attend a charter school in Fall 2017, including virtual charters.⁵⁸ Cannelton City Schools had total current expenditures of \$10,486 per student in 2013–14.⁵⁹

Rochester School Corporation, located in Fulton County in North-Central Indiana, has boundaries intersecting choice deserts in all four maps and is one of seven “D” rated districts in the state of Indiana.⁶⁰ According to the Indiana Department of Education’s database, there are four schools in the district with a PK–12 enrollment of 1,790 students in 2017–18.⁶¹

In Fall 2017, 45 students from Caston School Corporation, 40 students from Tippecanoe Valley School Corporation, 11 students from Culver Community Schools Corporation, nine students from Argos Community Schools, nine students from North Miami Community Schools, and eight additional students—each from a separate district—all *transferred into* Rochester School Corporation via parent choice; four students, each from a separate district, *transferred into* Rochester School Corporation for one of the aforementioned “other” reasons. Of the 1,827 students with legal settlement in Rochester School Corporation in Fall 2017, 138 students (7.6%) *transferred out* to schools in 11 different districts via parent choice and eight students (0.4%) *transferred out* to schools in five different districts for “other” reasons.

Thirty-eight students (2.2%) *transferred out* to four different virtual charter schools with “F” ratings, three students *transferred out* to one virtual charter school that just started in Fall 2017 and therefore did not receive a 2016–17 letter grade, and one student (0.1%) *transferred out* to Options Charter School Noblesville, an “F” rated brick-and-mortar charter school.⁶²

Six students (0.3%) *transferred out of the district* via the Choice Scholarship Program: half to attend Traders Point Christian Academy (a “C” rated voucher-participating school in Whitestown located more than an hour from the district) and half to attend Saint Michael School (an “A” rated voucher-participating school located in Plymouth, which is more than 30 minutes from some of the district residences but not all).⁶³ Rochester School Corporation had total current expenditures of \$8,857 per student in 2013–14.⁶⁴

DISCUSSION

Even in the communities with the least access to voucher-participating, charter, and magnet schools as well as to highly-rated schools, families are choosing educational options other than residentially assigned public schools. Cannelton City Schools and Rochester School Corporation are examples of this. Students in each district utilized Indiana's Choice Scholarship Program to attend private schools more than 30 minutes away, as well as those who transferred to different public school districts (see District Spotlights). While data indicate most families live within 30 minutes of an A-rated school and a voucher-participating, charter, or magnet school, the 30-minute mark does not inhibit all Hoosier families from accessing a school of their choice.

In addition, more than 100 students from outlying communities transferred into both districts in Fall 2017 despite their low ratings. Theoretically, these families were zoned to attend higher-rated options than the schools they transferred into, yet they transferred anyway. This indicates that not all families place the same value on school accountability grades when choosing educational options.

For these families and others, quality and educational fit is in the eye of the beholder. While the choice desert maps are fairly intuitive—families either have reasonable access to non-traditional public and voucher-participating schools or they don't—defining where families don't have access to "quality" is a bit trickier. Our first set of maps, the communities in Indiana with a lack of A-rated schools, observe communities with highly rated options in a similar fashion. But families in these and other communities may place more importance on the abundance of poorly rated options than the presence of highly rated ones. Others may care about school ratings and having educational options.

The maps showcasing the educational opportunity zones attempt to account for this. By layering drive times from schools of all non-traditional sectors without a "D" or "F" rating, these maps treat Indiana's educational landscape in a similar fashion to its voucher accountability system, which does not permit students to use state funds to attend persistently low-performing voucher-participating schools. Indiana policymakers, educators, and citizens can take pride in the fact that, for both primary and secondary students, there are not many places in the state where families are an unreasonable drive away from at least one non-failing school. This raises inquiry, though, regarding the merits of C-rated schools. Louisiana's main voucher program, for instance, includes zoning to a C-rated school as an eligibility pathway.⁶⁵

Questions abound over what combination of school accountability grades to measure. They also are raised as to whether these grades are a good measure at all. Many parents may use a variety of school characteristics other than rating to define school "quality" for their families. These measures may infer a quality proxy that may not be what families care about most. Indiana's A–F accountability grades are useful because of their standardization and reach across schooling sectors, but they may contain biases inherent in any human-crafted algorithm.

Despite this, accountability grades have real-world effects as a signaling tool to parents, policymakers, and educators. How these stakeholders interpret these grades in the context of the expanding research on school choice, parental satisfaction, and later-life outcomes will play a key role in re-defining "quality" across Indiana's educational landscape.

Sector considerations also are important. Overall, it is clear that traditional public schools greatly affect the A-rated drive-time analyses due to the sheer number of A-rated schools in that sector—74 percent of Indiana's A-rated schools are traditional public schools. When it comes to access to A-rated schools, there appear to be some stark differences when comparing proportions of populations.

- Most of Indiana’s families income-eligible for a 50 percent voucher seem to have comparably slightly better access to any A-rated K–8 charter school compared to Indiana families not income-eligible for a 50 percent voucher, while most of Indiana’s families income-eligible for a 50 percent voucher seem to have comparably slightly worse access to any A-rated traditional public K–8 school or magnet school compared to Indiana families not income-eligible for a 50 percent voucher.
- Nearly all of Indiana’s families income-eligible for a 50 percent voucher seem to have comparably slightly worse access to any A-rated traditional public high school compared to Indiana families not income-eligible for a 50 percent voucher.
- Most of Indiana’s FRL-eligible families seem to have comparably slightly better access to any A-rated voucher-participating K–8 school compared to Indiana families not income-eligible for FRL, while most of Indiana’s FRL-eligible families seem to have comparably slightly worse access to any A-rated traditional public K–8 school or magnet school compared to Indiana families not income-eligible for FRL.
- Most of Indiana’s FRL-eligible families seem to have comparably slightly better access to any A-rated charter high school compared to Indiana families not income-eligible for FRL, while nearly all of Indiana’s FRL-eligible families seem to have comparably slightly worse access to any A-rated traditional public high school compared to Indiana families not income-eligible for FRL.

It is encouraging that A-rated voucher-participating and charter schools seem to be comparably more accessible to most families in the lower income brackets compared to those in the higher income brackets, but it is potentially troubling that most lower-income families seem to have comparably less reasonable access to A-rated traditional public schools than most higher-income families.⁶⁶

It also is troubling that a select few high schoolers would need to travel nearly an hour in order to reach an A-rated school of any sector. It is more troubling to us—as school choice researchers who live in the great state of Indiana—that a select few high schoolers would need to travel nearly two hours to reach an A-rated voucher-participating school. Based on our research, we cannot currently tell if that is because there are fewer voucher-participating private schools serving the older grades, in general—because high schools tend to be larger than elementary or middle schools—or if it is exacerbated by the fact that there are fewer voucher-participating private schools serving those grades. It is also possible that private schools serving high-school grades are less excited about accepting voucher students because it is harder to help a voucher student in the high school grades “catch up” if they’ve been attending a relatively lower-rated traditional public school for the majority of their K–12 career that may not have been the best fit for them.

We observed choice deserts containing thousands of students without nearby schooling options other than their assigned public schools. Thousands more live in parts of the state that are left only with low-rated voucher-participating, charter, or magnet schools as an alternative to their traditional public school, with the issue exacerbated at the high school grades. Still more bleak, students in some parts of the state have no reasonable access to school choice options while being residentially assigned to poorly rated schools.

There are important considerations why it's necessary, but not sufficient, to be geographically close to a highly rated school, let alone any charter, magnet, or voucher-participating school. What if a family is close to a public school that applies admissions screens such as high-stakes tests that screen out students who haven't been adequately academically prepared up to that point? Or what if they're close to a voucher-participating school that doesn't serve meals, causing low-income families like theirs to choose between free breakfast and lunch at school or a higher-rated academic program? Although families in poverty may live close to an A-rated school, or any charter or voucher-participating school, what if they do not have access to a reliable car or other means of transportation? Although some charter and voucher-participating schools provide transportation, some do not.⁶⁷

POLICY IMPLICATIONS

It is important for Indiana's policymakers and influencers of K-12 policy to know which students lack reasonable access to highly rated schools, as well as to any charter, magnet, or voucher-participating schools. This could allow for devoting more funding or effort to public schools in particular deserts, depending on the policy goals in mind. It also could inform the siting of new schools, particularly if the schools are from highly rated charter or private school networks, or the funding of additional transportation supports for students that live in or near the deserts. Although The Mind Trust provides funding for the development and replication of high-quality charter schools and magnet schools, the funding is limited to Indianapolis.⁶⁸ It could behoove a multitude of small town and rural residents if this type of school development and replication funding were made available in their areas. The Indiana School Leadership Fellowship exists for district, charter, and voucher-participating school leaders located anywhere in the state.⁶⁹ Leaders of poorly rated schools could potentially learn things through their fellowship experience that

would help them improve their school letter grade, if that is something important to them and their community.

It is possible that the lack of access by economically diverse students is the reason some schools have an A-rating. In other words, the distance is actually excluding harder-to-serve students who might drag down schools' scores, but if the state were to open up transportation options so that struggling students have an easier time reaching these A-rated schools, an increase in those students' test scores might not actually be observed.

The state's A-F grading system as currently constructed may influence the type of school or intervention education entrepreneurs may attempt to create in a schooling desert, as well as the students served. Because the Indiana State Board of Education puts different weights on performance and growth domains depending on a school's cohort data, it is possible for schools to have differing accountability grades despite the same underlying test scores. Proposed accountability grade algorithms have looked to reduce the growth component while putting more weight on students passing standardized tests in high schools.⁷⁰ Such a measure could have a chilling effect on education entrepreneurs looking to start new schools that, early on, would not have graduation and other cohort data to offset the large performance weight. Accountability grades also could be affected by changes to the ISTEP+, the statewide test, or its replacement in some schools by college-readiness or nationally norm-referenced assessments.

This issue may be mitigated in existing voucher-participating schools, which have administered the state tests that factor into the accountability grades for some time. The differences between the grade-level deserts, though, are another matter. Currently, Indiana's voucher has fairly uniform within-district funding levels based on family income, regardless of a student's grade level. However, since high school students are arguably more expensive to educate than K-8 students, and the entire population of high schoolers must travel farther in order to reach an A-rated voucher-

participating school than K–8 students, it could be argued that high school students in Indiana might need a voucher funded at a higher amount than K–8 students, which is a funding option that does not currently exist within the state’s Choice Scholarship Program.

Although A-rated deserts and school choice deserts exist, it is possible that there may not be a large enough population in one or more of those areas to support a school that is not a traditional public school. In those cases, the only publicly funded alternative options to a traditional public school that is not A-rated could be an A-rated public online school or even a potential education savings account program. Education savings accounts (ESAs) allow parents to withdraw their children from public district or charter schools and receive a deposit of public funds into government-authorized savings accounts with restricted, but multiple, uses. Those funds—often distributed to families via debit card—can cover private school tuition and fees, online learning programs, private tutoring, community college costs, higher education expenses and other approved customized learning services and materials. Some ESAs, but not all, even allow students to use their funds to pay for a combination of public school courses and private services. Six states currently have ESA programs, but Indiana is not one of them.⁷¹

FUTURE RESEARCH

Future research related to Indiana’s schooling deserts may be conducted using various data sources, analyses, and guiding questions. One next step might be a complete replication of this research in a few years using forthcoming 2020 Census data. Such data would yield a more complete picture of Indiana block groups and their socioeconomic characteristics than currently available with the most recent ACS five-year estimates. A replication or follow-up of this research could also be expanded to include or focus primarily on drive times using public transportation.

Any replication of this research could also use a different rating than the state’s school grading system, or explore and attempt to account for biases inherent in the system’s algorithm. For instance, the huge disparity between the number of D- and F-rated public high schools compared with the number of similarly rated public primary schools had a substantial effect on the makeup of the maps showcasing the educational opportunity zones. Attempting to account for such dissimilarities, as well as using different cutoffs for “highly rated” and “non-failing” deserts, may result in different maps. The case of the Bloomington Graduation School and its congruent-yet-not exclusive district boundary with Monroe County School Corporation may also warrant the exploration of alternative schools and related coding issues within IDOE’s online dashboard listing of schools.

Regarding the economic theory underlying school choice, future analyses would be wise to consider drive times from more than one school, regardless of sector or the rating measure used.⁷² A single highly rated school in an area, by our methodology, would negate said area’s inclusion as an A-rated desert; however, the presence of more than one A-rated school in an area (especially across multiple school sectors) could incentivize all schools to continuously improve with the potential for expanded school choice. Such analyses, while undoubtedly expanding the number of choice deserts identified in the state, would importantly define the competitive and non-competitive Indiana communities when it comes to K–12 education.

This leads to the capacity issue, previously stated as a limitation but important for policy discussions. The presence of one or more A-rated or choice schools in a community may not be meaningful for most parents if a lack of available seats prevents their children from attending. Currently, the IDOE does not report capacity by school type across sectors, although previous estimates have been attempted to gauge this in the private school landscape.⁷³ An attempt to bridge capacity estimates

with school locations by sector and grade level may yield deeper insights into the areas of need identified in this paper.

The report briefly touches on the largest form of school choice in Indiana, inter- and intra-district public school choice. As an open enrollment state, students in Indiana theoretically have public school options beyond their assigned schools and school districts. In practice, though, public districts may voluntarily enact policies regarding accepting transfer applicants.⁷⁴ Future research could attempt to locate the areas for which families have the most and least ease of transferring by using individual districts' policies and state public corporation transfer data, incorporating these areas with the overall schooling deserts analysis.

Finally, while we have discussed ways in which our current research could be improved upon, we believe that the research contained in this document opens up to the larger consideration of what A-rated, charter, magnet, and voucher-participating schools in Indiana actually look like and who they serve. What would the chart of school grades look like if we weighted by student enrollment? Are small schools more likely to be highly rated than large schools? Although we discuss some population characteristics when it comes to reasonable access to A-rated schools, or any charter, magnet, or voucher-participating schools, what correlations exist between the school letter grades and enrollment demographics? These are all questions that could be answered with publicly available data from the Indiana Department of Education.

CONCLUSION

Indiana provides its citizens with multiple schooling options, but access is not evenly distributed across the state. Schooling deserts in Indiana vary in size and number depending on the measurement variable. Individual stakeholders,

including families, policymakers, and educators/entrepreneurs, may place various levels of importance in analyzing and attempting to address these areas.

Overall, the geospatial analyses contained in this report make it clear that Indiana students in grades K–8 live much closer to A-rated K–8 schools, regardless of sector, than high schoolers and A-rated high schools. Multiple A-rated deserts exist throughout the state. Regardless of population being measured, Indiana residents on the whole live closest to A-rated traditional public schools, followed by A-rated voucher-participating schools, then A-rated charter schools, then A-rated magnet schools. Logically, the more A-rated schools that exist in a sector, the shorter the maximum potential drive times.

However, an “A” rating is not always an important choosing factor in a family’s choice of school for their child. While the analyses show fairly reasonable overall drive times from at least one A-rated school for the majority of Hoosiers, there appear to be multiple areas of the state lacking any reasonable access to an A-rated school of any sector, especially for certain sub-populations, and all families should have the opportunity to send their children to a school that fits their definition of highly rated within a reasonable distance.⁷⁵ This is one of the many reasons that community leaders, educational leaders, and entrepreneurs may benefit from looking at all aspects of schools in each locale, talking to families about their individual needs, and working together to improve the educational landscape of all parts of the state.

Moreover, it would behoove policymakers, educational leaders, and entrepreneurs to take note of the areas of the state where students have reasonable access only to traditional public schools—especially the areas where reasonable access is only to a poorly rated, residentially assigned school. The latter are the parts of the state where students are potentially in the direst need of new or improved schooling options. And at the

end of the day, we can all—hopefully—agree that every student in Indiana deserves to have reasonable access to a school that gives them the opportunity to confidently step forward into the next chapter of their life.

"All who have meditated on the art of governing mankind have been convinced that the fate of empires depends on the education of youth."

~ Aristotle

APPENDIX 1

Frequencies of Grade Levels of "A" Rated Schools

Grade Range	All Schools	Traditional Publics	Vouchers	Charters	Magnets
K-5	93	89	2		2
PK-5	60	54	6		
PK-8	54		54		
6-8	39	36	1	2	
K-8	37	1	32	3	1
PK-6	35	29	6		
K-6	29	22	4	1	2
K-4	28	28			
PK-4	19	19			
7-8	11	11			
5-8	7	6		1	
3-5	6	6			
K-2	5	5			
5-6	5	5			
1-5	4	3			1
4-6	4	4			
PK-2	3	3			
PK-3	2	1	1		
K-3	2	2			
3-6	2	2			
K-1	1	1			
1-8	1		1		
2-5	1	1			
2-8	1	1			
3-4	1	1			
7-12	19	17	2		
PK-12	6		6		
K-12	5		4	1	
6-12	5	5			
PK-9	1		1		
7-10	1			1	
8-12	1		1		
9-12	120	97	19	4	
10-12	1			1	
Schools Serving at Least One Grade K-8	488	352	121	9	6
Schools Serving at Least One High School Grade (9-12)	159	119	33	7	0
Total	609	449	140	14	6

Notes: Combined subtotals are higher than total due to 38 schools belonging to both categories. Bolded and italicized grade ranges and numbers denote those schools.

APPENDIX 2

Populations' Drive-Time Distances (in minutes) from "A" Rated Schools Serving at Least One Grade K–8

	All Schools	Traditional Publics	Vouchers	Charters	Magnets
Percent of Indiana's K–8 Population (Ages 5 to 14)					
10%	2 to 3 minutes	3 to 4 minutes	3 to 4 minutes	12 to 14 minutes	12 to 15 minutes
20%	3 to 4 minutes	4 to 5 minutes	5 to 6 minutes	18 to 20 minutes	18 to 21 minutes
30%	4 to 5 minutes	5 to 6 minutes	6 to 7 minutes	26 to 28 minutes	27 to 30 minutes
40%	5 to 6 minutes	6 to 7 minutes	8 to 9 minutes	34 to 36 minutes	45 to 48 minutes
50%	6 to 7 minutes	8 to 9 minutes	10 to 11 minutes	44 to 46 minutes	60 to 63 minutes
60%	7 to 8 minutes	9 to 10 minutes	13 to 14 minutes	54 to 56 minutes	78 to 81 minutes
70%	8 to 9 minutes	11 to 12 minutes	17 to 18 minutes	64 to 66 minutes	102 to 105 minutes
80%	10 to 11 minutes	13 to 14 minutes	22 to 23 minutes	72 to 74 minutes	123 to 126 minutes
90%	14 to 15 minutes	17 to 18 minutes	30 to 31 minutes	90 to 92 minutes	144 to 147 minutes
100%	44 to 45 minutes	47 to 48 minutes	92 to 93 minutes	158 to 160 minutes	243 to 246 minutes
Percent of Indiana's FRL-Eligible Families (Income <\$35K)					
10%	2 to 3 minutes	3 to 4 minutes	3 to 4 minutes	10 to 12 minutes	9 to 12 minutes
20%	3 to 4 minutes	4 to 5 minutes	5 to 6 minutes	16 to 18 minutes	18 to 21 minutes
30%	4 to 5 minutes	6 to 7 minutes	6 to 7 minutes	28 to 30 minutes	36 to 39 minutes
40%	5 to 6 minutes	7 to 8 minutes	7 to 8 minutes	36 to 38 minutes	54 to 57 minutes
50%	6 to 7 minutes	9 to 10 minutes	10 to 11 minutes	46 to 48 minutes	66 to 69 minutes
60%	7 to 8 minutes	10 to 11 minutes	13 to 14 minutes	56 to 58 minutes	84 to 87 minutes
70%	9 to 10 minutes	12 to 13 minutes	17 to 18 minutes	64 to 66 minutes	105 to 108 minutes
80%	11 to 12 minutes	14 to 15 minutes	23 to 24 minutes	72 to 74 minutes	126 to 129 minutes
90%	15 to 16 minutes	18 to 19 minutes	32 to 33 minutes	92 to 94 minutes	144 to 147 minutes
100%	44 to 45 minutes	47 to 48 minutes	92 to 93 minutes	158 to 160 minutes	243 to 246 minutes
Percent of Indiana's Non-FRL-Eligible Families (Income ≥\$35K)					
10%	2 to 3 minutes	3 to 4 minutes	3 to 4 minutes	14 to 16 minutes	12 to 15 minutes
20%	3 to 4 minutes	4 to 5 minutes	5 to 6 minutes	20 to 22 minutes	21 to 24 minutes
30%	4 to 5 minutes	5 to 6 minutes	7 to 8 minutes	28 to 30 minutes	30 to 33 minutes
40%	5 to 6 minutes	6 to 7 minutes	9 to 10 minutes	36 to 38 minutes	48 to 51 minutes
50%	6 to 7 minutes	7 to 8 minutes	11 to 12 minutes	46 to 48 minutes	63 to 66 minutes
60%	7 to 8 minutes	9 to 10 minutes	14 to 15 minutes	56 to 58 minutes	81 to 84 minutes
70%	8 to 9 minutes	11 to 12 minutes	18 to 19 minutes	64 to 66 minutes	105 to 108 minutes
80%	11 to 12 minutes	13 to 14 minutes	23 to 24 minutes	74 to 76 minutes	123 to 126 minutes
90%	15 to 16 minutes	17 to 18 minutes	31 to 32 minutes	92 to 94 minutes	144 to 147 minutes
100%	44 to 45 minutes	47 to 48 minutes	92 to 93 minutes	158 to 160 minutes	243 to 246 minutes

	All Schools	Traditional Publics	Vouchers	Charters	Magnets
Percent of Indiana's Families Income-Eligible for a 50 Percent Voucher (Income <\$50K)					
10%	2 to 3 minutes	3 to 4 minutes	3 to 4 minutes	10 to 12 minutes	9 to 12 minutes
20%	3 to 4 minutes	4 to 5 minutes	5 to 6 minutes	18 to 20 minutes	21 to 24 minutes
30%	4 to 5 minutes	6 to 7 minutes	6 to 7 minutes	28 to 30 minutes	36 to 39 minutes
40%	5 to 6 minutes	7 to 8 minutes	8 to 9 minutes	38 to 40 minutes	54 to 57 minutes
50%	6 to 7 minutes	8 to 9 minutes	10 to 11 minutes	48 to 50 minutes	66 to 69 minutes
60%	7 to 8 minutes	10 to 11 minutes	13 to 14 minutes	56 to 58 minutes	84 to 87 minutes
70%	9 to 10 minutes	12 to 13 minutes	18 to 19 minutes	64 to 66 minutes	105 to 108 minutes
80%	11 to 12 minutes	14 to 15 minutes	24 to 25 minutes	72 to 74 minutes	123 to 126 minutes
90%	15 to 16 minutes	18 to 19 minutes	32 to 33 minutes	94 to 96 minutes	144 to 147 minutes
100%	44 to 45 minutes	47 to 48 minutes	92 to 93 minutes	158 to 160 minutes	243 to 246 minutes
Percent of Indiana's Families Not Income-Eligible for a 50 Percent Voucher (Income ≥\$50K)					
10%	2 to 3 minutes	2 to 3 minutes	3 to 4 minutes	14 to 16 minutes	12 to 15 minutes
20%	3 to 4 minutes	4 to 5 minutes	5 to 6 minutes	20 to 22 minutes	21 to 24 minutes
30%	4 to 5 minutes	5 to 6 minutes	7 to 8 minutes	26 to 28 minutes	30 to 33 minutes
40%	5 to 6 minutes	6 to 7 minutes	9 to 10 minutes	36 to 38 minutes	48 to 51 minutes
50%	6 to 7 minutes	7 to 8 minutes	11 to 12 minutes	46 to 48 minutes	60 to 63 minutes
60%	7 to 8 minutes	9 to 10 minutes	13 to 14 minutes	56 to 58 minutes	81 to 84 minutes
70%	8 to 9 minutes	10 to 11 minutes	17 to 18 minutes	64 to 66 minutes	105 to 108 minutes
80%	10 to 11 minutes	13 to 14 minutes	22 to 23 minutes	74 to 76 minutes	126 to 129 minutes
90%	15 to 16 minutes	17 to 18 minutes	30 to 31 minutes	92 to 94 minutes	144 to 147 minutes
100%	44 to 45 minutes	47 to 48 minutes	92 to 93 minutes	158 to 160 minutes	243 to 246 minutes
Number of "A" Rated Schools	488	352	121	9	6

Notes: Shaded text denote differences in each comparison group, with green indicating a faster drive time and red indicating a slower drive time. Because the number of drive-time rings in Maptitude is limited to 100, charter school drive-times were calculated in two-minute intervals and magnet school drive-times were calculated in three-minute intervals.

APPENDIX 2

Populations' Drive-Time Distances (in minutes) from "A" Rated Schools Serving at Least One High School Grade (9–12)

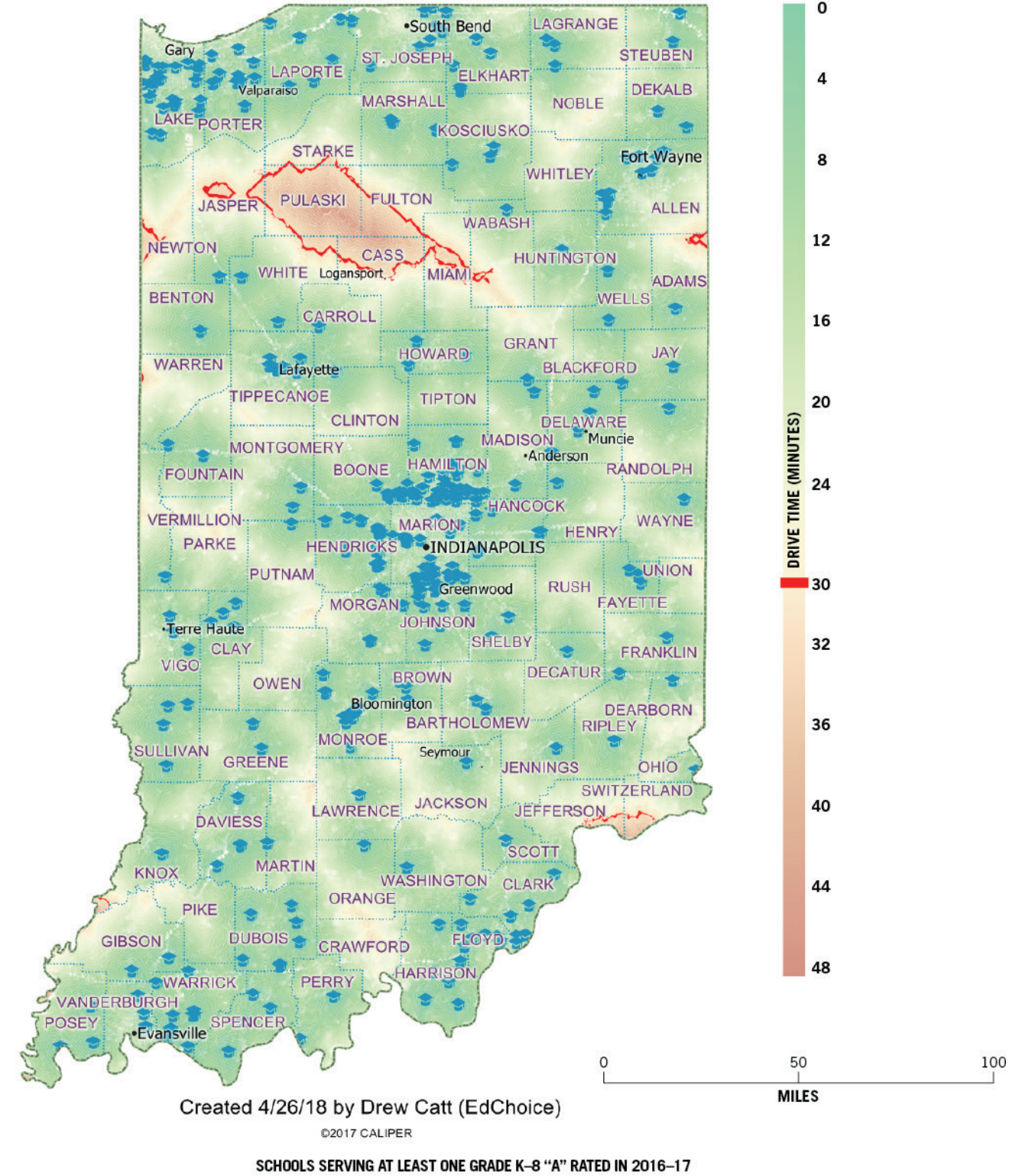
	All Schools	Traditional Publics	Vouchers	Charters	Magnets
Percent of Indiana's High School Population (Ages 15 to 19)					
10%	3 to 4 minutes	4 to 5 minutes	4 to 6 minutes	12 to 14 minutes	N/A
20%	5 to 6 minutes	6 to 7 minutes	8 to 10 minutes	18 to 20 minutes	N/A
30%	6 to 7 minutes	8 to 9 minutes	10 to 12 minutes	26 to 28 minutes	N/A
40%	7 to 8 minutes	10 to 11 minutes	14 to 16 minutes	34 to 36 minutes	N/A
50%	9 to 10 minutes	11 to 12 minutes	18 to 20 minutes	48 to 50 minutes	N/A
60%	10 to 11 minutes	13 to 14 minutes	24 to 26 minutes	58 to 60 minutes	N/A
70%	12 to 13 minutes	15 to 16 minutes	32 to 34 minutes	68 to 70 minutes	N/A
80%	15 to 16 minutes	17 to 18 minutes	42 to 44 minutes	76 to 78 minutes	N/A
90%	20 to 21 minutes	21 to 22 minutes	58 to 60 minutes	86 to 88 minutes	N/A
100%	55 to 56 minutes	54 to 55 minutes	110 to 112 minutes	138 to 140 minutes	N/A
Percent of Indiana's FRL-Eligible Families (Income <\$35K)					
10%	3 to 4 minutes	5 to 6 minutes	4 to 6 minutes	10 to 12 minutes	N/A
20%	5 to 6 minutes	7 to 8 minutes	6 to 8 minutes	14 to 16 minutes	N/A
30%	6 to 7 minutes	9 to 10 minutes	10 to 12 minutes	24 to 26 minutes	N/A
40%	7 to 8 minutes	11 to 12 minutes	14 to 16 minutes	34 to 36 minutes	N/A
50%	9 to 10 minutes	12 to 13 minutes	18 to 20 minutes	46 to 48 minutes	N/A
60%	11 to 12 minutes	14 to 15 minutes	26 to 28 minutes	58 to 60 minutes	N/A
70%	13 to 14 minutes	16 to 17 minutes	34 to 36 minutes	66 to 68 minutes	N/A
80%	16 to 17 minutes	18 to 19 minutes	44 to 46 minutes	76 to 78 minutes	N/A
90%	21 to 22 minutes	22 to 23 minutes	58 to 60 minutes	86 to 88 minutes	N/A
100%	55 to 56 minutes	54 to 55 minutes	110 to 112 minutes	138 to 140 minutes	N/A
Percent of Indiana's Non-FRL-Eligible Families (Income ≥\$35K)					
10%	3 to 4 minutes	4 to 5 minutes	4 to 6 minutes	14 to 16 minutes	N/A
20%	5 to 6 minutes	6 to 7 minutes	8 to 10 minutes	20 to 22 minutes	N/A
30%	6 to 7 minutes	8 to 9 minutes	12 to 14 minutes	26 to 28 minutes	N/A
40%	7 to 8 minutes	9 to 10 minutes	16 to 18 minutes	34 to 36 minutes	N/A
50%	9 to 10 minutes	11 to 12 minutes	20 to 22 minutes	46 to 48 minutes	N/A
60%	10 to 11 minutes	13 to 14 minutes	24 to 26 minutes	58 to 60 minutes	N/A
70%	13 to 14 minutes	15 to 16 minutes	32 to 34 minutes	68 to 70 minutes	N/A
80%	16 to 17 minutes	17 to 18 minutes	40 to 42 minutes	78 to 80 minutes	N/A
90%	20 to 21 minutes	21 to 22 minutes	54 to 56 minutes	88 to 90 minutes	N/A
100%	55 to 56 minutes	54 to 55 minutes	110 to 112 minutes	138 to 140 minutes	N/A

	All Schools	Traditional Publics	Vouchers	Charters	Magnets
Percent of Indiana's Families Income-Eligible for a 50 Percent Voucher (Income <\$50K)					
10%	3 to 4 minutes	5 to 6 minutes	4 to 6 minutes	10 to 12 minutes	N/A
20%	5 to 6 minutes	7 to 8 minutes	6 to 8 minutes	16 to 18 minutes	N/A
30%	6 to 7 minutes	9 to 10 minutes	10 to 12 minutes	26 to 28 minutes	N/A
40%	7 to 8 minutes	11 to 12 minutes	14 to 16 minutes	36 to 38 minutes	N/A
50%	9 to 10 minutes	12 to 13 minutes	20 to 22 minutes	48 to 50 minutes	N/A
60%	11 to 12 minutes	14 to 15 minutes	26 to 28 minutes	58 to 60 minutes	N/A
70%	13 to 14 minutes	16 to 17 minutes	34 to 36 minutes	68 to 70 minutes	N/A
80%	16 to 17 minutes	18 to 19 minutes	44 to 46 minutes	76 to 78 minutes	N/A
90%	21 to 22 minutes	22 to 23 minutes	58 to 60 minutes	86 to 88 minutes	N/A
100%	55 to 56 minutes	54 to 55 minutes	110 to 112 minutes	138 to 140 minutes	N/A
Percent of Indiana's Families Not Income-Eligible for a 50 Percent Voucher (Income ≥\$50K)					
10%	3 to 4 minutes	4 to 5 minutes	6 to 8 minutes	14 to 16 minutes	N/A
20%	5 to 6 minutes	6 to 7 minutes	8 to 10 minutes	20 to 22 minutes	N/A
30%	6 to 7 minutes	8 to 9 minutes	12 to 14 minutes	26 to 28 minutes	N/A
40%	7 to 8 minutes	9 to 10 minutes	16 to 18 minutes	32 to 32 minutes	N/A
50%	9 to 10 minutes	11 to 12 minutes	20 to 22 minutes	46 to 48 minutes	N/A
60%	10 to 11 minutes	13 to 14 minutes	24 to 26 minutes	58 to 60 minutes	N/A
70%	12 to 13 minutes	15 to 16 minutes	32 to 34 minutes	68 to 70 minutes	N/A
80%	16 to 17 minutes	17 to 18 minutes	40 to 42 minutes	78 to 80 minutes	N/A
90%	20 to 21 minutes	21 to 22 minutes	54 to 56 minutes	88 to 90 minutes	N/A
100%	55 to 56 minutes	54 to 55 minutes	110 to 112 minutes	138 to 140 minutes	N/A
Number of "A" Rated Schools	159	119	33	7	0

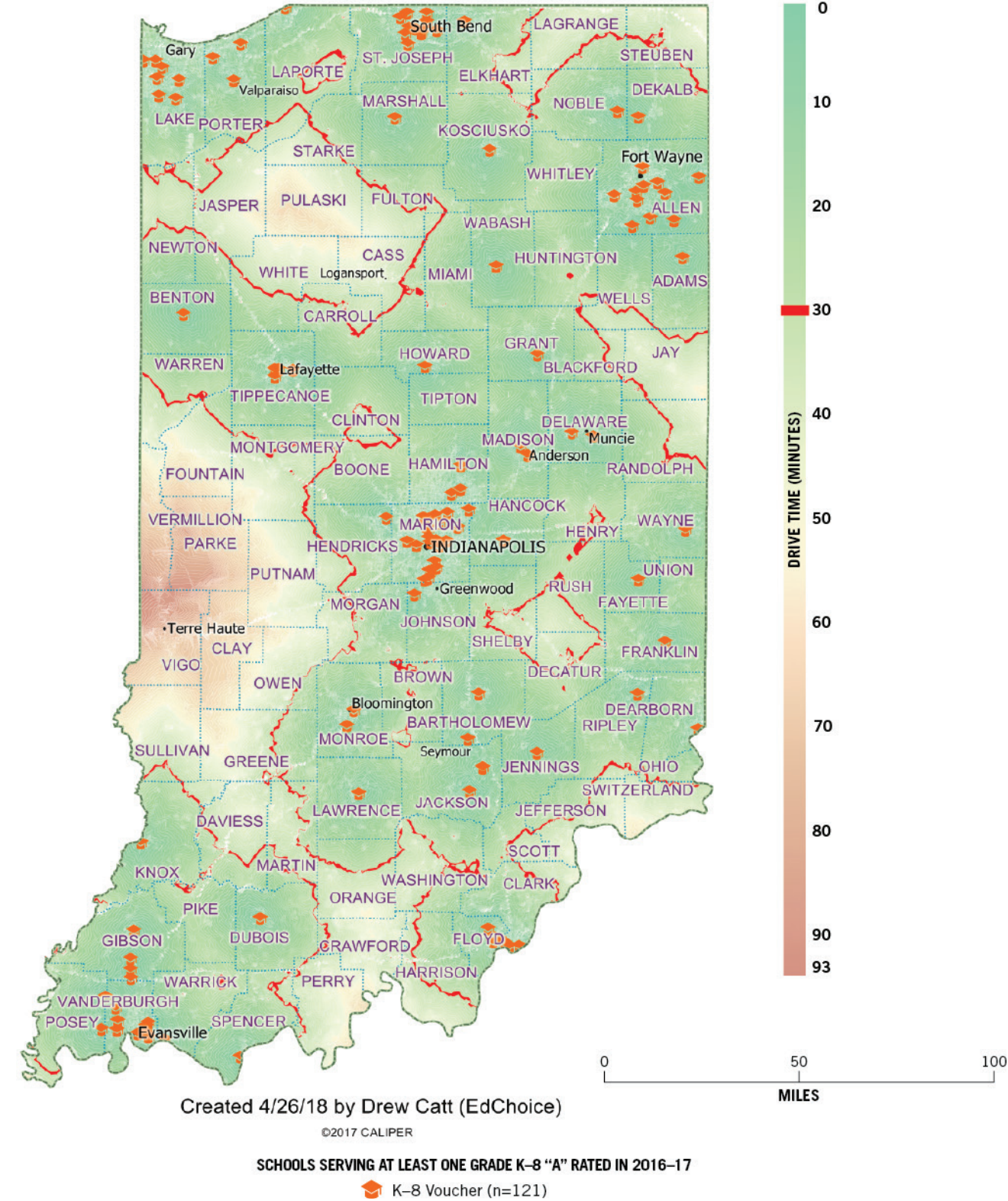
Notes: Shaded text denote differences in each comparison group, with green indicating a faster drive time and red indicating a slower drive time. Because the number of drive-time rings in Maptitude is limited to 100, voucher-participating school and charter school drive-times were calculated in two-minute intervals. Discrepancies between "All Schools" and "Traditional Publics" are most likely due to a small portion of a block group falling into the maximum drive time of one but not the other, resulting in the entire block group being included in one and not the other.

APPENDIX 3
Additional K–8 Maps

A-Rated Deserts (K–8 Traditional Public Schools)
An estimated 4,240 primary students live without reasonable access to A-rated K–8 traditional public schools

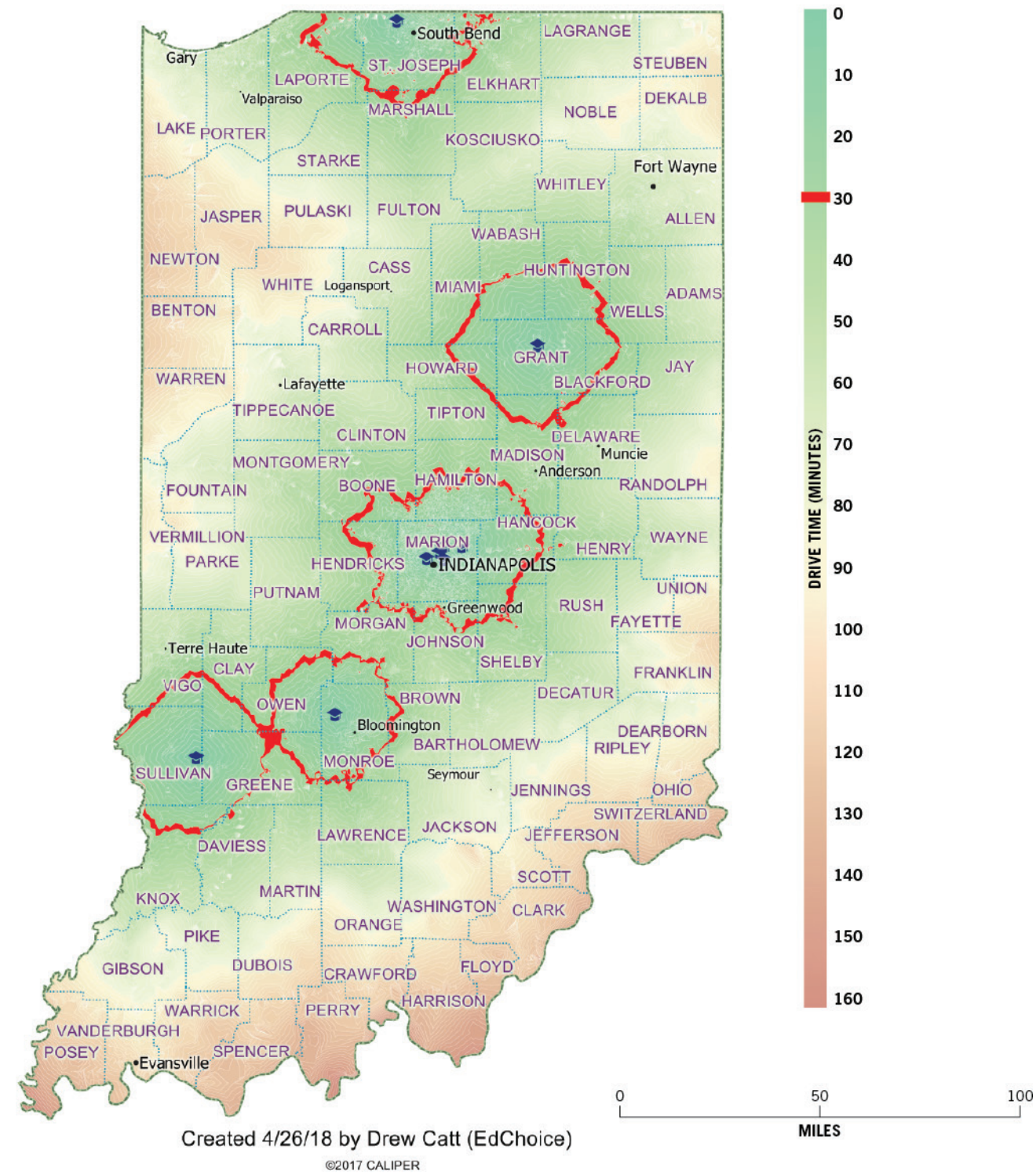


A-Rated Deserts (K–8 Voucher-Participating Schools)
An estimated 95,406 primary students live without reasonable access to A-rated K–8 voucher-participating schools



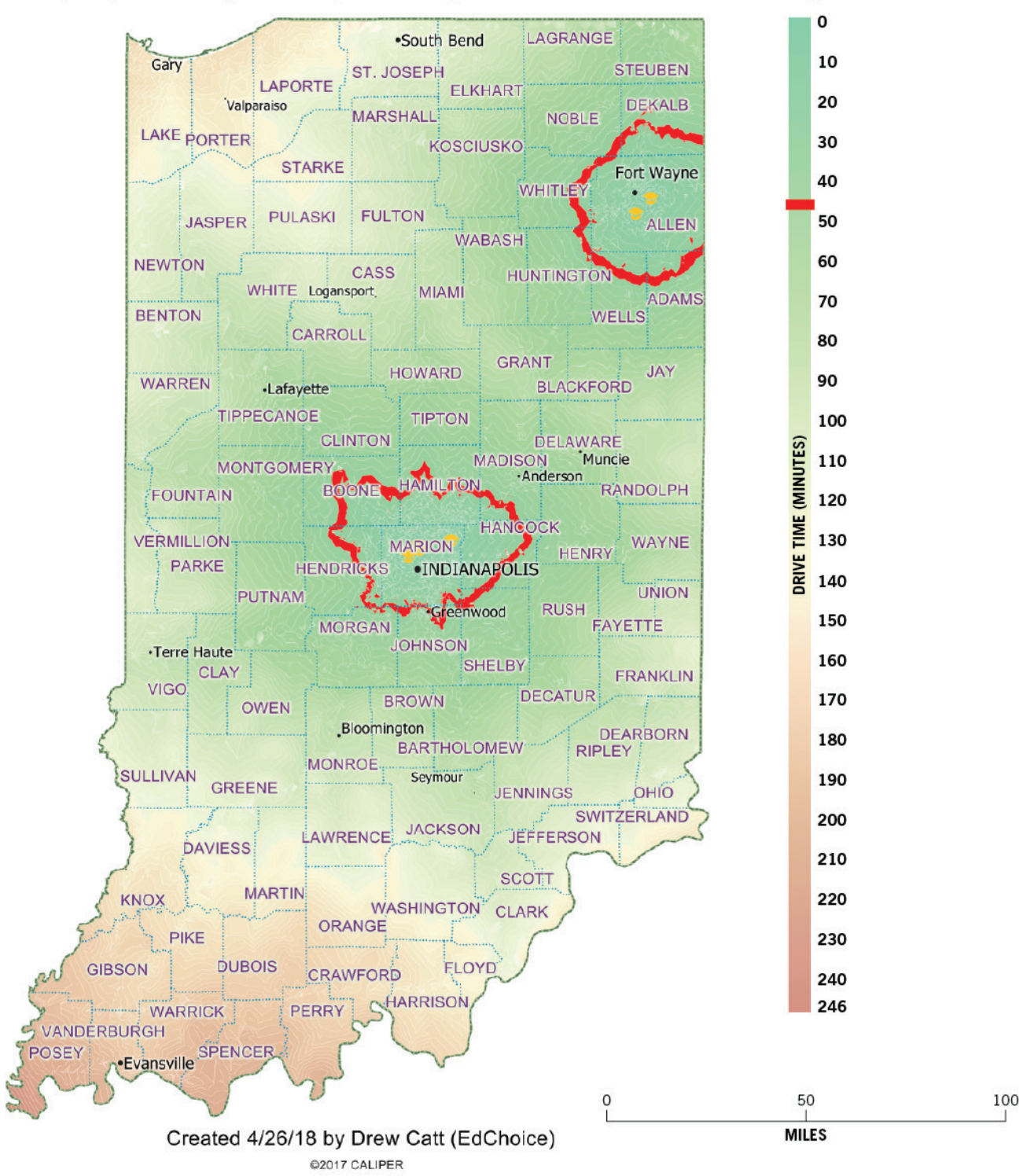
APPENDIX 3
Continued

A-Rated Deserts (K–8 Charter Schools)
An estimated 586,819 primary students live without reasonable access to A-rated K–8 charter schools



SCHOOLS SERVING AT LEAST ONE GRADE K–8 “A” RATED IN 2016–17
K–8 Charter (n=9)

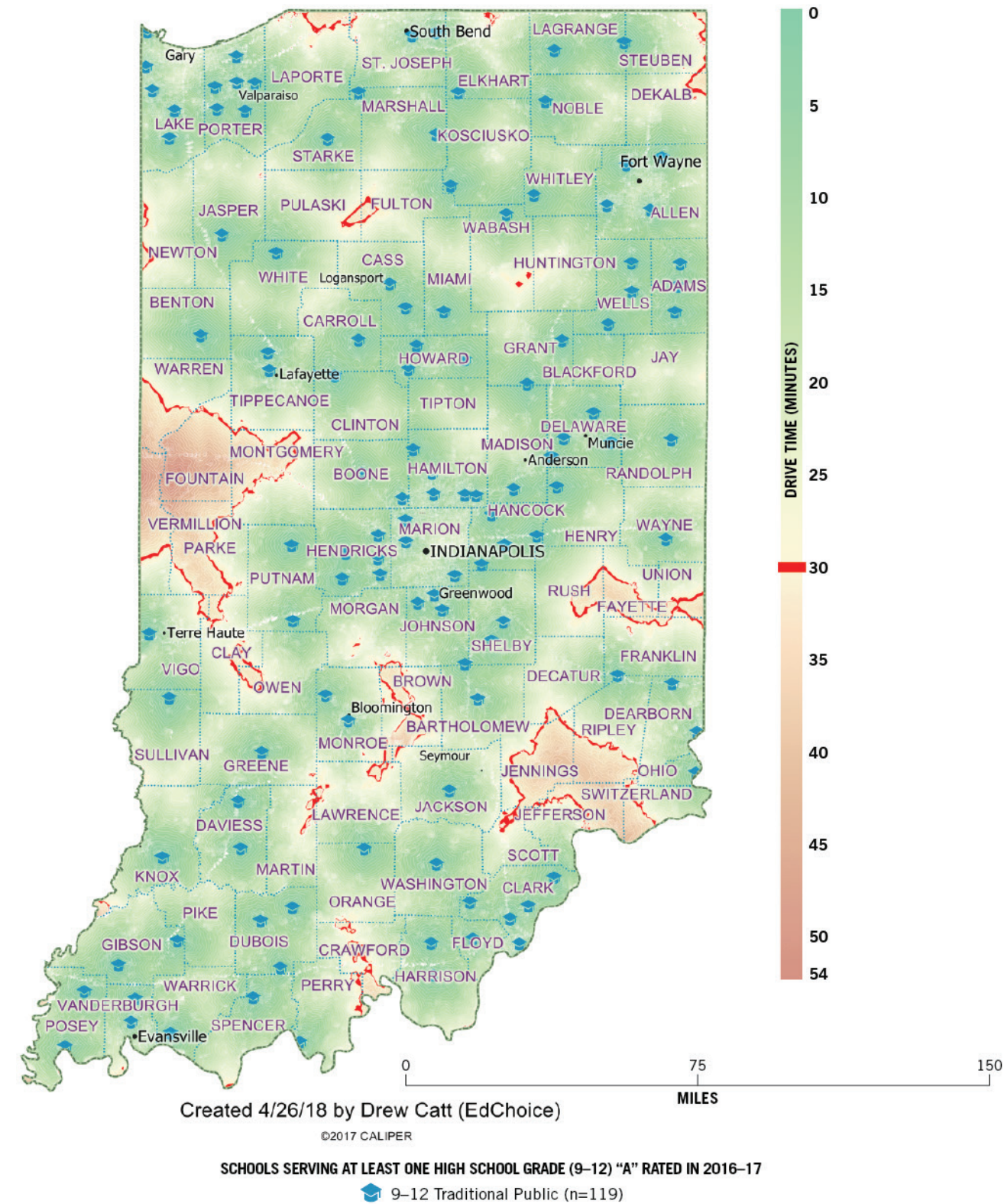
A-Rated Deserts (K–8 Magnet Schools)
Only certain primary students living near Indianapolis or Fort Wayne have reasonable access to A-rated K–8 magnet schools



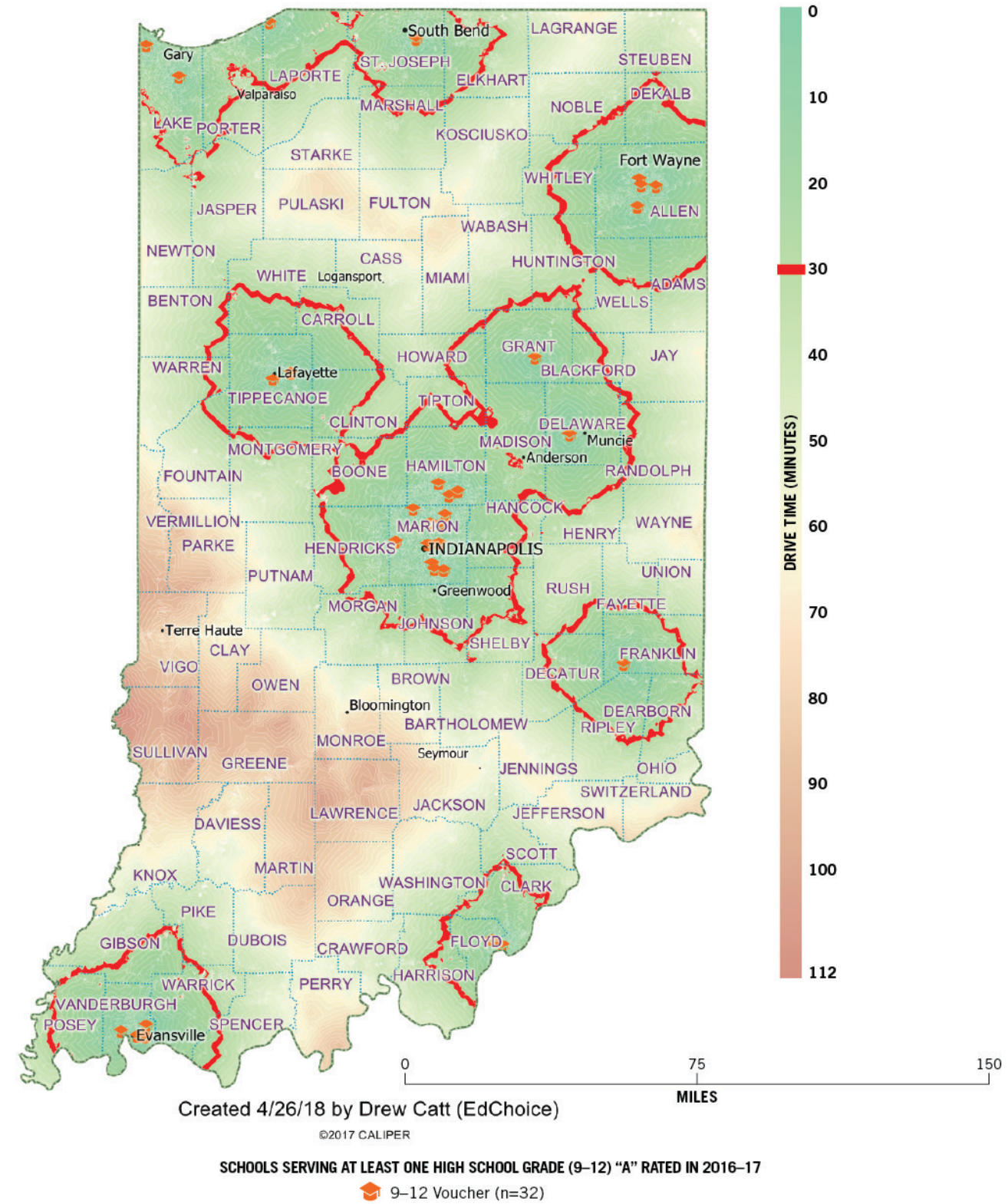
SCHOOLS SERVING AT LEAST ONE GRADE K–8 “A” RATED IN 2016–17
K–8 Magnet (n=6)

APPENDIX 4
Additional 9–12 Maps

A-Rated Deserts (9–12 Traditional Public Schools)
An estimated 7,249 secondary students live without reasonable access to A-rated traditional public high schools

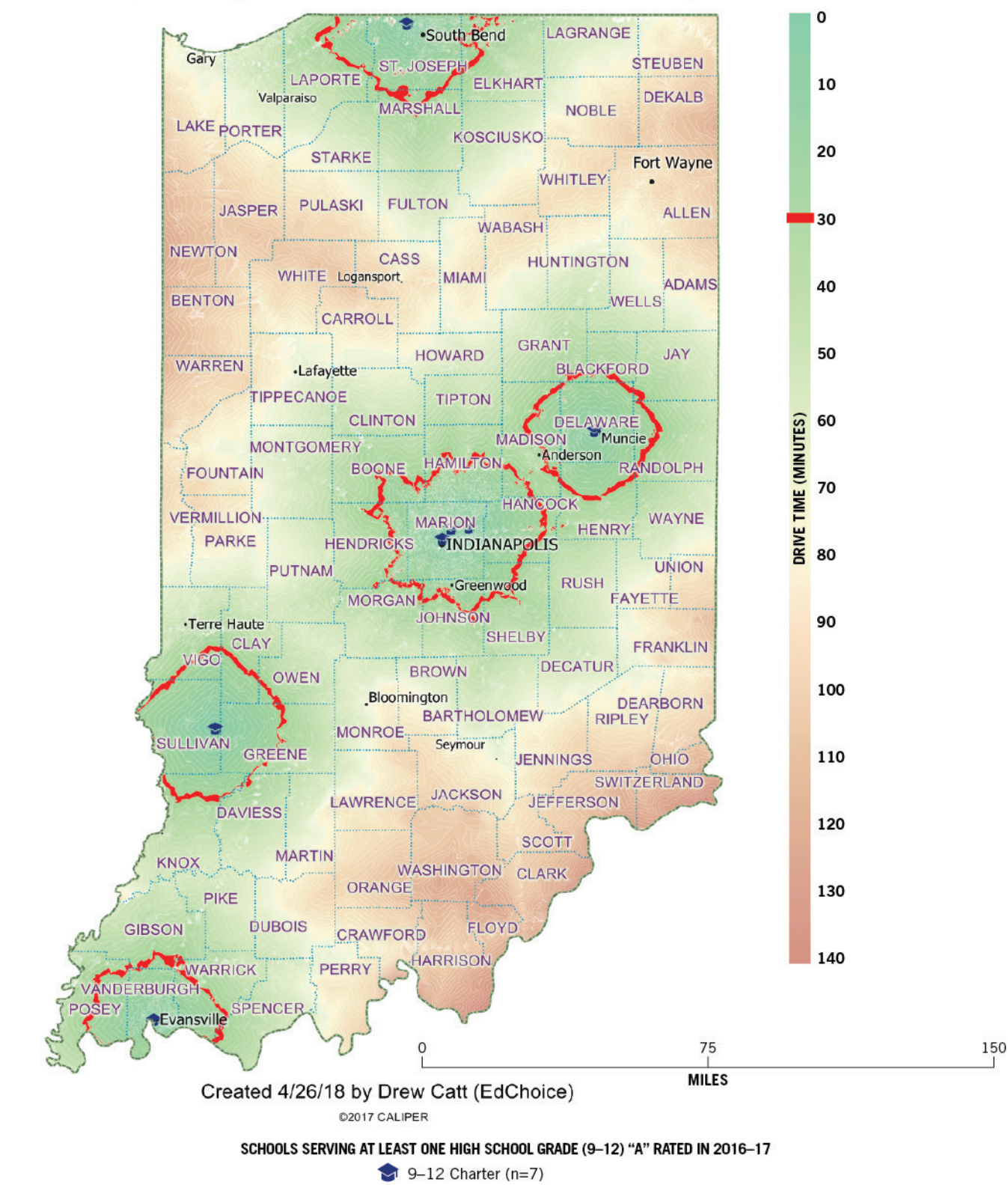


A-Rated Deserts (9–12 Voucher-Participating Schools)
An estimated 154,906 secondary students live without reasonable access to A-rated voucher-participating high schools



APPENDIX 4
Continued

A-Rated Deserts (9–12 Charter Schools)
An estimated 301,428 secondary students live without reasonable access to A-rated charter high schools



NOTES

¹ It is important to note that there is a category of “choosers” missing from this list: those who move to specific neighborhoods to access their desirable public schools. An estimated 41 percent of Indiana parents do so. See Andrew D. Catt and Evan Rhinesmith (2017), *Why Indiana Parents Choose: A Cross-Sector Survey of Parents’ Views in a Robust School Choice Environment* (Questionnaire and Topline Results), Table 51, p. 21, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-Questionnaire-and-Topline-Results.pdf>. The travel trade-offs this and other categories of parents face is quantified in Jonathan Eyer (2018), Does School Quality Matter? A Travel Cost Approach, *Education Finance and Policy*, 13(2), pp. 149–167, http://dx.doi.org/10.1162/edfp_a_00223

² Shaina Cavazos (2017, July 20), In a Speech to ALEC, Betsy DeVos Name Drops Indiana School Choice Programs and Advocates, *Chalkbeat*, retrieved from <https://www.chalkbeat.org/posts/in/2017/07/20/in-a-speech-to-alec-betsy-devos-name-drops-indiana-school-choice-programs-and-advocates>; Dan Carden (2018, April 10), Indiana Students Continue Outpacing U.S. Average on “The Nation’s Report Card,” *Northwest Indiana Times*, retrieved from https://www.nwitimes.com/news/education/indiana-students-continue-outpacing-u-s-average-on-the-nation/article_3be8488c-eaee-51d8-9266-19e0e6c71d31.html

³ Indiana Department of Education (2018, April 27), *Indiana Affirms General Diploma Distinction Despite Federal Waiver Determination* [Press release], retrieved from <https://www.doe.in.gov/news/indiana-affirms-general-diploma-distinction-despite-federal-waiver-determination>; Dylan Peers McCoy (2017, December 21), Seven Big Reasons to Pay Attention to Indiana Education News in 2018, *Chalkbeat*, retrieved from <https://chalkbeat.org/posts/in/2017/12/21/even-big-reasons-to-pay-attention-to-indiana-education-news-in-2018>; Arika Herron (2018, May 10), Here’s Why Your Kids May Not Evacuate the School Immediately if a Fire Alarm is Pulled, *Chalkbeat*, retrieved from <https://www.indystar.com/story/news/2018/05/10/indiana-special-session-school-safety-bill-includes-evacuation-delay/576938002>; Indiana Education Savings Account Program, H.B. 1311, 2016 Session of the Indiana General Assembly, 2018, accessed June 27, 2018, retrieved from <https://iga.in.gov/legislative/2016/bills/house/1311>

⁴ While test scores form the bedrock of these calculations, the growth vs. performance rating can be critical in determining a school’s grade. See Dylan Peers McCoy and Shaina Cavazos (2017, October 6), How Indiana’s A-F Rules Created a Two-Tiered System That Benefits Innovation Schools, *Chalkbeat*, retrieved from <https://www.chalkbeat.org/posts/in/2017/10/06/how-indianas-a-f-rules-created-a-two-tiered-system-that-benefits-innovation-schools>

⁵ Because individual school and student body characteristics determine the weights, performance, growth, and multiple

measures, calculations vary by school. Indiana Department of Education (2016), *How to Calculate A-F School Grades*, retrieved from <https://www.doe.in.gov/sites/default/files/accountability/how-calculate-f-school-grades-04-27-2016.pdf>

⁶ EdChoice (2018), Indiana – School Scholarship Tax Credit [web page], accessed April 3, 2018, retrieved from <https://www.edchoice.org/school-choice/programs/indiana-school-scholarship-tax-credit>; EdChoice (2018), Indiana – Choice Scholarship Program [web page], accessed April 3, 2018, retrieved from <https://www.edchoice.org/school-choice/programs/indiana-choice-scholarship-program>

⁷ Authors’ phone conversation with Bobby Cox, Indiana High School Athletic Association (IHSAA) Commissioner, March 27, 2018; Indiana High School Athletic Association (2017), *2017-2018 By-Laws and Articles of Incorporation*, retrieved from <http://www.ihsaa.org/Portals/0/ihsaa/documents/about%20ihsaa/2017-18%20By-Laws.pdf>

⁸ For a review of potential test-based accountability effects in Louisiana, a state with two often-discussed voucher programs, as well as a comparison with participant effects of Indiana’s Choice Scholarship Program, see Martin Lueken (2017, June 28), School Voucher Programs in Indiana and Louisiana [Blog post], *Education Next*, retrieved from <http://educationnext.org/school-voucher-programs-indiana-louisiana>

⁹ Doug Mesecar and Don Soifer (2016, February 24), How Performance-Based Funding Can Improve Education Funding [Blog post], retrieved from <https://www.brookings.edu/blog/brown-center-chalkboard/2016/02/24/how-performance-based-funding-can-improve-education-funding>

¹⁰ Marcus A. Winters (2016, August 24), How “F” Grades Improve Schools, *RealClearEducation*, retrieved from https://www.realcleareducation.com/articles/2016/08/24/how_f_grades_improve_schools_1302.html

¹¹ McCoy and Cavazos (2017, October 6), How Indiana’s A-F Rules Created a Two-Tiered System That Benefits Innovation Schools

¹² Cory Turner and Anya Kamenetz (2017, June 26), School Vouchers Get 2 New Report Cards, *nprEd*, retrieved from <https://www.npr.org/sections/ed/2017/06/26/533192616/school-vouchers-get-a-new-report-card>; Jessica L. Sandham (2001, April 25), Indiana Legislature Passes Charter School Law, *Education Week*, retrieved from <https://www.edweek.org/ew/articles/2001/04/25/32indiana.h20.html>

¹³ Students must also have attended public school, have an Individualized Education Plan, be zoned to an F-rated school, or be the sibling of a voucher or tax-credit scholarship student. Indiana Department of Education, *Choice Scholarship Program Pathway Eligibility Requirements: 2017-18 School Year*, retrieved from <https://www.doe.in.gov/sites/default/files/choice/03-17-18-cs-student-eligibility-june-2017.pdf>

- ¹⁴ EdChoice (2018), *The ABCs of School Choice: The Comprehensive Guide to Every Private School Choice Program in America*, 2018 Edition, p. 3, retrieved from <https://www.edchoice.org/wp-content/uploads/2018/01/ABCs-of-School-Choice-2018-Edition-1.pdf>
- ¹⁵ EdChoice, *The ABCs of School Choice*, p. 5
- ¹⁶ Magnet Schools of America, What Are Magnet Schools [web page], accessed April 26, 2018, retrieved from <https://www.magnet.edu/about/what-are-magnet-schools>
- ¹⁷ Authors' calculations; Indiana Department of Education (2018), *Choice Scholarship Program Annual Report: Participation and Payment Data*, retrieved from <https://www.doe.in.gov/sites/default/files/choice/2017-2018-choice-scholarship-program-report-022018-final.pdf>; Indiana Department of Education (2017), Fall 2017-2018 Public Corporation Transfer Report [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/fall-2017-2018-public-corporation-transfer-report.xlsx>
- ¹⁸ Andrew D. Catt and Evan Rhinesmith (2017), *Why Indiana Parents Choose: A Cross-Sector Survey of Parents' Views in a Robust School Choice Environment*, retrieved from EdChoice website: <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-2.pdf>; Andrew D. Catt and Evan Rhinesmith (2016), *Why Parents Choose: A Survey of Private School and School Choice Parents in Indiana*, retrieved from EdChoice website: <https://www.edchoice.org/research/why-parents-choose>
- ¹⁹ The term "desert" is regarded as gaining popularity in this context in Steven Cummins and Sally Macintyre (1999), *The Location of Food Stores in Urban Areas*, *British Food Journal*, 101(7), pp. 545–553, <https://dx.doi.org/10.1108/00070709910279027>
- ²⁰ Renee E. Walker, Christopher R. Keane, and Jessica G. Burke (2010), *Disparities and Access to Healthy Food in the United States: A Review of Food Deserts Literature*, *Health & Place*, 16(5), pp. 876–884, <https://dx.doi.org/j.healthplace.2010.04.013>
- ²¹ Kristin Blagg and Matthew M. Chingos (2017), *Who Could Benefit from School Choice? Mapping Access to Public and Private Schools* (Evidence Speaks Reports, Vol. 2, 12), Economic Studies at Brookings, retrieved from Brookings Institution website: https://www.brookings.edu/wp-content/uploads/2017/03/es_20170330_chingos_evidence_speaks.pdf
- ²² Kristin Blagg, Matthew Chingos, Sean P. Corcoran, Sarah A. Cordes, Joshua Cowen, Patrick Denice, Betheny Gross, Jane Arnold Lincove, Carolyn Sattin-Bajaj, Amy Ellen Schwartz, and Jon Valant (2018), *The Road to School: How Far Students Travel to School in the Choice-Rich Cities of Denver, Detroit, New Orleans, New York City, and Washington DC*, Urban Institute Student Transportation Working Group, retrieved from Urban Institute website: https://www.urban.org/sites/default/files/publication/97151/the_road_to_school_4.pdf
- ²³ Andrew Saultz, Queenstar Mensa-Bonsu, Christopher Yaluma, and James Hodges (2018), *Charter School Deserts: High-Poverty Neighborhoods with Limited Educational Options*, retrieved from Thomas B. Fordham Institute's website: <https://edexcellence.net/publications/charter-school-deserts-report>
- ²⁴ Throughout this report, we use the term "voucher-participating school" to denote schools which enrolled at least one voucher student during the 2017–18 school year. This subset of schools is not necessarily the same number of private schools eligible for Indiana's voucher program year-to-year.
- ²⁵ Authors' calculations; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>. Does not include two traditional public K-terminal schools and five private schools not participating in the voucher program in 2017–18.
- ²⁶ Traditional public schools accounted for 80 percent of schools graded by the Indiana State Board of Education in 2017.
- ²⁷ Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>
- ²⁸ The portion of the population of a block group included in a drive-time band is proportional to the percentage of the block group's geographic area covered by the drive-time band's overlay. For more information on Maptitude, please see Caliper (2018), Maptitude Mapping Software [web page], accessed May 3, 2018, retrieved from <https://www.caliper.com/maptovu.htm>. For more information on the American Community Survey (ACS), please see U.S. Census Bureau (2018), *About the American Community Survey* [web page], accessed May 3, 2018, retrieved from <https://www.census.gov/programs-surveys/acs/about.html>
- ²⁹ Caliper (2018), *Census Block Groups 2018* [web page], accessed May 3, 2018, retrieved from <https://www.caliper.com/mapping-software-data/census-block-groups.htm>
- ³⁰ U.S. Census Bureau (2018), *American Community Survey – Item Allocation Rates* [web page], accessed May 4, 2018, retrieved from <https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/item-allocation-rates/index.php>
- ³¹ Kaustav Misra, Paul W. Grimes, and Kevin E. Rogers (2012), *Does Competition Improve Public School Efficiency? A Spatial Analysis*, *Economics of Education Review*, 31(6), pp. 1177–1190, <https://doi.org/10.1016/j.econedurev.2012.08.001>; David Figlio and Cassandra M. D. Hart (2014), *Competitive Effects of Means-Tested School Vouchers*, *American Economic Journal: Applied Economics*, 6(1), pp. 133–156, <https://doi.org/10.1257/app.6.1.133>; Anna J. Egalite (2016), *The Competitive Effects of the Louisiana Scholarship Program on Public School Performance* (Louisiana Scholarship Program Evaluation

Report 4), retrieved from Education Research Alliance for New Orleans website: <http://educationresearchalliancenola.org/files/publications/Report-4-LSP-Competitive-Effects.pdf>; Saultz, Mensa-Bonsu, Yaluma, and Hodges, *Charter School Deserts: High-Poverty Neighborhoods with Limited Educational Options*

³² “The routing tools in Mapitude 2017 already use historical traffic conditions (calculated using billions of anonymous measurements from cell phones and vehicle sensors) to determine the speeds used when creating directions, travel times, and travel distances.” Caliper, USA Traffic Count Data [web page], accessed May 3, 2018, retrieved from <https://www2.caliper.com/store/product/aadt-traffic-count-data>

³³ EdChoice (2017), *Questionnaire and Topline Results: Why Indiana Parents Choose*, Q57, p. 22, retrieved from <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-Questionnaire-and-Topline-Results.pdf>

³⁴ Although the voucher accountability system incorporates two years of school ratings, we only look at a single school year of ratings. However, it stands to reason that schools currently rated “D” or “F” are the only schools that could have back-to-back years of “D” or “F” ratings when the next year of ratings is released. For more information, see Indiana Department of Education (2018), *Choice Scholarship Program: Frequently Asked Questions for Participating Schools: 2018-2019 School Year*, retrieved from <https://www.doe.in.gov/sites/default/files/choice/5-choice-school-faq-february-2018.pdf>

³⁵ Jason Bedrick (2016, December 16), Want Accountability in Education? Empower Parents, *EducationNext*, retrieved from <http://educationnext.org/want-accountability-in-education-empower-parents>

³⁶ Catt and Rhinesmith (2017), *Why Indiana Parents Choose*

³⁷ Steven Glazerman and Dallas Dotter (2016), *Market Signals: Evidence on the Determinants and Consequences of School Choice from a Citywide Lottery* (Working Paper 45), Mathematica Policy Institute, retrieved from Mathematica Policy Institute website: <https://www.mathematica-mpr.com/our-publications-and-findings/publications/market-signals-evidence-on-the-determinants-and-consequences-of-school-choice-from-a-citywide>

³⁸ Jay P. Greene (2016), Evidence for the Disconnect Between Changing Test Scores and Later Life Outcomes [Blog post], <http://educationnext.org/evidence-for-the-disconnect-between-changing-test-scores-and-changing-later-life-outcomes>

³⁹ For a look at urban travel times using public transportation, please see Blagg, Chingos, Corcoran, Cordes, Cowen, Denice, Gross, Lincove, Sattin-Bajaj, Schwartz, and Valant (2018), *The Road to School: How Far Students Travel to School in the Choice-Rich Cities of Denver, Detroit, New Orleans, New York City, and Washington DC*

⁴⁰ Indiana does allow Ohio students to attend the Union County–College Corner Joint School District, but these students are not represented in this project since they do not reside in block groups located in Indiana. Union County College Corner Joint School District (2018), Ohio Students [web page], accessed May 4, 2018, retrieved from <https://www.uc.k12.in.us/ohio-students>

⁴¹ See note 30

⁴² As of this writing, 17 states have or are developing some form of A–F school grading systems. EdWeek (2017), *Which States Grade Their Schools?* [Infographic], retrieved from <https://secure.edweek.org/media/2017/03/07/24-rankings-cl.jpg>

⁴³ Collin Hitt, Michael Q. McShane, and Patrick J. Wolf (2018), *Do Impacts on Test Scores Even Matter? Lessons from Long-Run Outcomes in School Choice Research*, retrieved from American Enterprise Institute website: <http://www.aei.org/wp-content/uploads/2018/04/Do-Impacts-on-Test-Scores-Even-Matter.pdf>

⁴⁴ Indeed, real estate listings and websites often include the zoned school and its grade when describing other neighborhood characteristics. This choosing of the home to choose a school can be seen as the largest form of school choice nationwide, although families without income of a particular level may not have access to such choice. See Jennifer Jellison Holme (2002), Buying Homes, Buying Schools: School Choice and the Social Construction of School Quality, *Harvard Educational Review*, 72(2), pp. 177–206, <https://dx.doi.org/10.17763/haer.72.2.u6272x676823788r>

⁴⁵ Ibid.

⁴⁶ See note 13

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Andrew D. Catt (2018, March 13), Mapping Indiana’s K–12 Student Transfers [Blog post], retrieved from <https://www.edchoice.org/blog/mapping-indianas-k-12-student-transfers>

⁵⁰ Milton Friedman (1955), The Role of Government in Education, in Robert A. Solo (ed.), *Economics and the Public Interest: Essays in Honor of Eugene Ewald Agger* (pp. 123-144), retrieved from <http://la.utexas.edu/users/hcleaver/330T/350kPEEFriedmanRoleOfGovtable.pdf>

⁵¹ Ibid.

⁵² Indiana Department of Education (2018), *Choice Scholarship Program: Frequently Asked Questions for Participating Schools: 2018-2019 School Year*, retrieved from <https://www.doe.in.gov/sites/default/files/choice/5-choice-school-faq-february-2018.pdf>

⁵³ Diploma Plus (2018), Students [web page], accessed June 7, 2018, retrieved from <http://www.diplomaplus.net/students.html>

⁵⁴ Indiana Department of Education (2018), 2017 A-F Corporation Grade Results [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-corporation-grade-placement-1182018.xlsx>

⁵⁵ Indiana Department of Education (2018), Cannelton Elementary and High School (6733) [web page], accessed May 23, 2018, retrieved from <https://compass.doe.in.gov/dashboard/overview.aspx?type=school&id=6733>; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

⁵⁶ Cannelton City Schools (2018), Our Schools [web page], accessed May 23, 2018, retrieved from <http://www.cannelton.k12.in.us/Schools>

⁵⁷ Indiana Department of Education (2017), Fall 2017-2018 Public Corporation Transfer Report [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/fall-2017-2018-public-corporation-transfer-report.xlsx>

⁵⁸ See note 49

⁵⁹ U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency (School District) Universe Survey Directory Data", 2015-16 v.1a; "Local Education Agency (School District) Universe Survey Membership Data", 2015-16 v.1a; "School District Finance Survey (F-33)", 2013-14 (FY 2014) v.1a. via ELSi tableGenerator, accessed June 7, 2018, retrieved from <https://nces.ed.gov/ccd/elsi/tableGenerator.aspx>

⁶⁰ Indiana Department of Education (2018), 2017 A-F Corporation Grade Results [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-corporation-grade-placement-1182018.xlsx>

⁶¹ Indiana Department of Education (2018), Rochester Community School Corporation (2645) [web page], accessed May 24, 2018, retrieved from <https://compass.doe.in.gov/dashboard/overview.aspx?type=corp&id=2645>; Indiana Department of Education (2018), 2017 A-F Corporation Grade Results [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-corporation-grade-placement-1182018.xlsx>

⁶² Indiana Department of Education (2017), Fall 2017-2018 Public Corporation Transfer Report [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/fall-2017-2018-public-corporation-transfer-report.xlsx>; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/>

[af-2017-school-grade-placement-03192018.xlsx](#); Indiana Virtual Pathways Academy (2017), Pathways Academy Opens [web page], May 24, 2018, retrieved from <http://www.indianapathwaysacademy.com/news/18/Pathways-Academy-Opens>

⁶³ Indiana Department of Education (2017), Fall 2017-2018 Public Corporation Transfer Report [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/fall-2017-2018-public-corporation-transfer-report.xlsx>; Indiana Department of Education (2018), *School Domain Scores in 2017 A-F School Grade Results* [Data file], retrieved from <https://www.doe.in.gov/sites/default/files/accountability/af-2017-school-grade-placement-03192018.xlsx>

⁶⁴ See note 59

⁶⁵ EdChoice (2018), Louisiana Scholarship Program [web page], accessed June 13, 2018, retrieved from <https://www.edchoice.org/school-choice/programs/louisiana-scholarship-program>

⁶⁶ See Tables in Appendix 2 and Appendix 3 for the full distribution of the FRL-eligible, non-FRL eligible, voucher eligible, non-voucher eligible, and all students' drive times from each schooling sector.

⁶⁷ Enroll Indy (2017), What Are the Different Types of Schools? [web page], accessed June 7, 2018, retrieved from <https://enrollindy.org/uFAQs/what-are-the-different-types-of-schools>

⁶⁸ The Mind Trust (n.d.), Charter School Fellowship [web page], accessed June 20, 2018, retrieved from <http://www.themindtrust.org/growing-great-schools/charter-schools/charter-school-fellowship>; The Mind Trust (n.d.), Schools Launched in Indy [web page], accessed June 20, 2018, retrieved from <http://www.themindtrust.org/growing-great-schools/charter-schools/charter-school-incubator-investments>

⁶⁹ The Oaks Academy (2018) Indiana School Leader Fellowship [web page], accessed June 20, 2018, retrieved from <https://www.theoaksacademy.org/fellows>. Disclaimer: EdChoice sponsors this fellowship.

⁷⁰ These changes were postponed during the 2018 legislative session. Shaina Cavazos (2018, January 5), Proposed A-F Grading Rules Would Make Test Scores Even More Important in Indiana, *Chalkbeat*, retrieved from <https://www.chalkbeat.org/posts/in/2018/01/05/proposed-a-f-grading-rules-would-make-test-scores-even-more-important-in-indiana>

⁷¹ EdChoice (2018), What is an Education Savings Account? [web page], accessed May 4, 2018, retrieved from <https://www.edchoice.org/school-choice/types-of-school-choice/education-savings-account>

⁷² See note 50

⁷³ Andrew D. Catt (2014), *Exploring Indiana's Private Education Sector*, School Survey Series 1, retrieved from EdChoice website: <http://www.edchoice.org/wp-content/uploads/2015/07/Exploring-Indianas-Private-Education-Sector.pdf>

⁷⁴ See note 49

⁷⁵ Based on survey data, there are differences across sectors on how far families would be willing to have their child travel to attend a different school that might be a better fit. EdChoice (2017), *Questionnaire and Topline Results: Why Indiana Parents Choose*, Q58, p. 23, retrieved from <https://www.edchoice.org/wp-content/uploads/2017/09/Why-Indiana-Parents-Choose-Questionnaire-and-Topline-Results.pdf>

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